

**T H E**  
**N A U T I C A L A L M A N A C**

**A N D**

**ASTRONOMICAL EPHEMERIS,**

**F O R T H E Y E A R 1774.**

Published by O R D E R of the

**C O M M I S S I O N E R S O F L O N G I T U D E .**

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**M D C C L X X I I .**

**[Price Three Shillings and Six Pence.]**





# P R E F A C E.

**T**HE Commissioners of Longitude, in pursuance of the Powers vested in them by Act of Parliament, present the Publick with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1774, being the Eighth Impression, to be continued annually ; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every Thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Publick in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER of Gottingen to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use : To remove which this EPHEMERIS was made ; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculus ; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published among the Tables  
requisite

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requisite to be used with the EPHEMERIS; or by either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL.

By Desire of the Commissioners of Longitude, I drew up the Explanation and Use of the Articles contained in the EPHEMERIS, and the Instructions, with Examples, for finding the Longitude at Sea by the Help of the same. I also collected and calculated the Sixteen First Pages of Tables requisite to be used with the EPHEMERIS, and computed the Table of proportional Logarithms, which seemed to me absolutely necessary to clear this Method of any remaining Difficulty; and added Explanations of all the Tables, and a Correction, p. 49 and 50, which may be applied by the Curious to the Effect of Refraction on the Moon's Distance from a Star, found by Mr. LYONS, or any other Method, on account of the Barometer and Thermometer.

All the Calculations of the EPHEMERIS relating to the Sun and Moon were made from Mr. MAYER's last manuscript Tables, received by the Board of Longitude after his Decease, which have been printed under my Inspection, and published in 1770. The Calculations of the Planets were made from Dr. HALLEY's Tables; and the Eclipses of Jupiter's First and Second Satellites from the Tables of Mr. WARGENTIN, published by M. DE LA LANDE in 1759; and those of the Third and Fourth Satellites from Tables of the  
3 same

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same farther improved by Mr. WARGENTIN, and annexed, the first, to the NAUTICAL ALMANAC of 1771, and the other to the CONNOISSANCE DES MOUVEMENTS CELESTES of 1766.

All the Articles of the EPHEMERIS were computed by Two separate Persons, and examined by a Third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which, for Noon, were computed by One Person, and for Midnight by another, and the Truth of these Calculations ascertained by means of Differences, which, for the Moon's Longitude, were carried as far as the Fourth Order.

To this EPHEMERIS are annexed 1220 Longitudes and Latitudes of the Moon, deduced from the late Dr. BRADLEY's Observations, made with the new Meridian Instruments at the *Royal Observatory* constructed by Mr. BIRD, between SEPT. 13th 1750 and Nov. 2d 1760, and compared with a Set of manuscript Tables improved by Dr. BRADLEY from Professor MAYER's First manuscript Tables. The greater Part of these Calculations was made during Dr. BRADLEY's Lifetime by himself and his Assistant Mr. CHARLES MASON; and what was left unfinished has been completed by Mr. MASON since at the Instance and at the Expence of the Board of Longitude. A Series of Observations this for Number and Exactness far excelling any thing of the same Kind which the World ever saw before, and which present or even future Astronomers will not easily surpass in Accuracy, affording a sure Touch-stone for trying  
a the



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the best modern Lunar Tables and Theories, and the Means of improving them! Accordingly the Board of Longitude have thought proper to employ Mr. MASON farther in making the necessary Calculations for improving MAYER's printed Tables, under my Direction, by the Help of this Series of Observations, which comprehends somewhat more than a Period of the Moon's Apogee; and I have the Pleasure to find from that Part of the Work which is already done, that the Corrections (contrary to Expectation) turn out so considerable as to give Room to hope that, when all the Corrections are made, the greatest Errors of the Tables may be reduced within a much narrower Compass than they are at present.

To the Ten Years Series of Lunar Observations I have subjoined the Elements of the Lunar Tables with which the foregoing Observations were compared, and likewise the Elements of Professor MAYER's First and Second manuscript Tables, and of a printed Set of Tables composed by the late Mr. GAEL MORRIS; all expressed after the Manner of the Formulæ exhibited in p. 52 and 57 of MAYER's THEORIA LUNÆ.

The HADLEY's QUADRANT, which has long been acknowledged the most convenient and exact Instrument for finding the Latitude by Altitudes of the Sun, having also for some Years past been found the best adapted Instrument for finding the Longitude at Sea from Observations of Distances of the Moon from the Sun and Stars, every Improvement in the Construction and Adjustment of  
this



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this valuable Instrument becomes a Matter of Importance. I here offer my Attempts for this Purpose in Remarks on the Hadley's Quadrant; and if they shall be found to extend its Use, or augment its Exactness, I shall have obtained my End.

Lastly is added, a useful astronomical Problem to find the Error of a Transit Telescope, by Mr. LYONS; and Two Examples, by the same, of the Calculation of the Longitude from an Observation of the Moon, when the general Tables of Refraction and Parallax (which are now completed and will be published shortly) are made Use of.

The Circumstances of the Occultation of Venus by the Moon, DEC. 20th 1772 (this Year) was not set down in the First Page of DEC. in the EPHEMERIS for this Year, because it happens in the Day-time, and it was doubted whether it would be visible. But as it may be expected to be seen with a good Telescope, if the Air should prove clear, I shall set down the Particulars of the Occultation in this Place.

Apparent Time at Greenwich.

|                  | H. M. S.   | M. S. |                               |
|------------------|------------|-------|-------------------------------|
| First Contact .  | 20. 49. 13 | }     | ♂ 15. 30 North of ♀'s Center. |
| Total Immersion  | 20. 51. 3  |       |                               |
| Begin. of Emerf. | 21. 15. 29 | }     | ♀ 15. 34 North of ♀'s Center. |
| Last Contact .   | 21. 17. 23 |       |                               |

Let me remark also, that the First Impression of the Moon on the Sun, in the small solar Eclipse of OCT. 25th of this Year, will happen  $44^{\circ}$  to the West of the Sun's uppermost Point; but as the

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greatest Impression of the Moon on the Sun at the Middle of the Eclipse is only One Fourth of a Minute by the Tables, if there should happen to be a small Error of the Tables in Latitude, the Circumstances of the Eclipse may differ widely from those set down, or it may prove no Eclipse at all.

I cannot conclude this Preface without taking Notice of some Remarks made on the Calculations of the Sun in the NAUTICAL ALMANACS of 1769 and 1770, by M. BERNOUILLI, Astronomer to his PRUSSIAN Majesty, in his RECUEIL POUR LES ASTRONOMES, which might lead those who should not take the Pains to examine the Matter to think that the Calculations of the NAUTICAL ALMANAC are not made with that Care which the Public have a Right to expect. M. BERNOUILLI's words, p. 20 and 21, are as follow: " Ayant calculé un  
 " grand nombre de lieux du Soleil à midi vrai,  
 " pour l'année passée & pour celle-ci (1770) &  
 " pour les Méridiens de Vienne, de Paris, & de  
 " Greenwich, il m'a paru que ces calculs se faisoient  
 " avec le plus de soin dans le premier endroit;  
 " les erreurs étoient ordinairement nulles, & je n'en  
 " ai trouvé que deux qui passassent 2". Dans l'Al-  
 " manac Nautique, les longitudes du Soleil m'ont  
 " paru fort exactes pour l'usage auquel cet ouvrage  
 " est destiné; les erreurs ne se sont jamais trouvé  
 " nulles, mais aussi la plus grand n'a été que de  
 " 13". J'ai remarqué deux erreurs plus fortes  
 " dans la connoissance des tems, mais en revanche  
 " l'erreur assés souvent étoit o." In English, thus:  
 " Having calculated a great many Longitudes of  
 " the

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“ the Sun at apparent Noon in the last Year and  
“ in the present Year 1770, and for the Meridians  
“ of VIENNA, PARIS, and GREENWICH, it appeared  
“ to me that these calculations were made with the  
“ most care for the First Place [namely, in the  
“ Ephemerides of VIENNA] the Errors were com-  
“ monly nothing, and I found only Two which  
“ exceeded Two Seconds. In the NAUTICAL AL-  
“ MANAC the Longitudes of the Sun appeared to  
“ me very exact for the Use for which this Work  
“ is intended; the Errors were never nothing,  
“ but then the greatest Error was only 13". I have  
“ remarked Two Errors greater than this in the  
“ CONNOISSANCE DES TEMPS; but, in Return,  
“ the Error was often nothing.”

Being satisfied from my own Calculations, and those of other able Computers, that the Calculations of the NAUTICAL ALMANAC here alluded to are made with all possible Care and Exactness, that the Error is commonly nothing, and never exceeds One or Two Seconds at most, I might call upon Mr. BERNOUILLI to point out the Days where he supposes the Calculations to be faulty, and to produce his own Calculations, but that his own Words in the Page preceding those already cited are sufficient to shew the Mistake to have been his own in supposing the Calculations of the Sun's Longitude in the NAUTICAL ALMANAC, like those in the Ephemerides of Vienna and in the Connoissance des Temps, to be made from DE LA CAILLE's Solar Tables, whereas they were really made from MAYER's Solar Tables.

His



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His words in p. 19 are these : “ On est étonné  
 “ en ouvrant les Ephémérides les plus célèbres, de  
 “ trouver entre les Tables de l'Equation du Temps,  
 “ des différences bien plus considérables que celles  
 “ qui résultent de la différence des Méridiens pour  
 “ lesquelles ces Ephémérides sont calculées, d'autant  
 “ que depuis la publication des célèbres Tables du  
 “ Soleil de feu M. de la Caille, tous les Calculs du  
 “ Soleil ont, je crois, été faits sur ces Tables, si ce  
 “ n'est dans les Ephémérides de Bologne, où l'on a  
 “ suivi les Tables de Halley, & dans lesquelles,  
 “ au reste on ne trouve pas l'Equation du Temps.  
 “ J'eus du moins cette surprise en comparant en-  
 “ semble relativement à cette Equation, les Ephé-  
 “ mériques de Vienne, celles de M. l'Abbé de la  
 “ Caille, la Connoissance des Temps, & l'Amanac  
 “ Nautique de M. Maskelyne.”

In English thus : “ It is a Matter of Surprise to  
 “ find that the Equation of Time in the most cele-  
 “ brated Ephemerides differs more than what should  
 “ arise from the Difference of Meridians for which  
 “ they are calculated, considering that since the pub-  
 “ lication of the celebrated Solar Tables of the late  
 “ M. DE LA CAILLE, all the Calculations of the  
 “ Sun have, I believe, been made from these Tables,  
 “ except in the Ephemerides of Bologna, where  
 “ HALLEY'S Tables have been followed, in which  
 “ however the Equation of Time is not set down.  
 “ At least I was myself struck with Surprise upon  
 “ comparing together the Ephemerides of Vienna,  
 “ those of M. l'Abbé DE LA CAILLE, the Con-  
 “ noissance des Temps, and Nautical Almanac of  
 “ Mr. MASKELYNE.”

From

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From hence it appears, that M. BERNOUILLI took it for granted that the Longitudes of the Sun in the NAUTICAL ALMANAC were calculated from DE LA CAILLE's Solar Tables. But he might have been easily satisfied to the contrary, if he would but have taken the Trouble to consult the Preface of any one of the NAUTICAL ALMANACS from 1767 to the present, in which he would have found these Words, " All the Calculations of the EPHEMERIS " relating to the Sun and Moon were made from " Mr. MAYER's last manuscript Tables, received " by the Board of Longitude after his Decease, " which have been printed under my Inspection." Therefore after all the wonder is, not that Calculations of the NAUTICAL ALMANAC should sometimes differ 13' from DE LA CAILLE's Solar Tables, but rather that they should never differ more from these Tables which they were not computed from. It will easily be allowed that these Tables may sometimes differ from MAYER's by 13", and in Effect I find that the Difference of the Tables may sometimes, though very rarely, amount to 17". The greater errors which M. BERNOUILLI finds in the Calculations of the Connoissance des Temps, with respect to the Tables from which they were really computed, it is neither my Business to aggravate or excuse. On the whole, I would not be understood to insinuate that I thought M. BERNOUILLI had any Design of misrepresenting the Truth on this Occasion : I believe the contrary, and entertain the same Esteem for the Talents and Spirit of this young Astronomer as when I had the Pleasure of his Acquaintance during his Visit to ENGLAND; and from a Letter of his which I have seen addressed  
to

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to one of his Correspondents here, am assured he will have the Candor to acknowledge and rectify his Mistake in the next Volume of his RECUEIL POUR LES ASTRONOMES.

NEVIL MASKELYNE,  
ASTRONOMER ROYAL.

GREENWICH,  
JULY 2d,  
1772.

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### Erratum of Elements of Lunar Tables.

Page 44. Maximum of 8th Equation of Latitude in Mayer's printed Tables; for  $+ 0^{\circ}. 0'. 3, 7''$ . read  $- 0^{\circ}. 0'. 3, 7''$ .

EXPLA-



# EXPLANATION of the Characters used in the EPHEMERIS.

## The PLANETS, &c.

- |                                                                                                 |            |
|-------------------------------------------------------------------------------------------------|------------|
| ☉ The Sun.                                                                                      | ♂ Mars.    |
| ☾ The Moon.                                                                                     | ♃ Jupiter. |
| ☿ Mercury.                                                                                      | ♄ Saturn.  |
| ♀ Venus.                                                                                        |            |
| ♊ The Moon's, or any other Planet's Ascending Node.                                             |            |
| ♋ The Descending Node.                                                                          |            |
| ♌ Conjunction, or Planets situated in the same Longitude.                                       |            |
| ♍ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other. |            |

## Signs of the Zodiac.

- |              |                   |
|--------------|-------------------|
| S.           | S.                |
| 0. ♈ Aries.  | 6. ♎ Libra.       |
| 1. ♉ Taurus. | 7. ♏ Scorpio.     |
| 2. ♊ Gemini. | 8. ♐ Sagittarius. |
| 3. ♋ Cancer. | 9. ♑ Capricornus. |
| 4. ♌ Leo.    | 10. ♒ Aquarius.   |
| 5. ♍ Virgo.  | 11. ♓ Pisces.     |

## ECLIPSES for the YEAR 1774.

March 11. ☉ eclipsed, invisible.

♌ at 21<sup>h</sup>. 55<sup>1</sup>/<sub>2</sub>'. in 11°. 21°. 56'. D's Lat. 0°. 1<sup>1</sup>/<sub>2</sub>'. N. The Sun will be centrally eclipsed on the Merid. at 21<sup>h</sup>. 57'. in Lat. 1<sup>1</sup>/<sub>2</sub>° South, and Long. 30<sup>3</sup>/<sub>4</sub>° East of Greenwich.

Sept. 5. ☉ eclipsed, invisible.

♌ at 13<sup>h</sup>. 59'. in 5°. 13°. 28'. D's Lat. 0°. 2' N. The Sun will be centrally eclipsed on the Merid. at 13<sup>h</sup>. 58', in Lat. 9° North, and Long. 150<sup>1</sup>/<sub>2</sub>° East of Greenwich.

Obliquity

# Obliquity of Ecliptic. Equat. of Equin. Points.

|          |       |     |     |      |       |       |
|----------|-------|-----|-----|------|-------|-------|
| 1774.    |       | •   | '   | ''   |       |       |
| Jan. 1.  | _____ | 23. | 27. | 58,1 | _____ | — 1,3 |
| Apr. 1.  | _____ | 23. | 27. | 58,1 | _____ | — 2,8 |
| July 1.  | _____ | 23. | 27. | 58,1 | _____ | — 4,3 |
| Oct. 1.  | _____ | 23. | 27. | 58,3 | _____ | — 5,7 |
| Dec. 31. | _____ | 23. | 27. | 58,5 | _____ | — 7,1 |

## Errata of MAYER's Tables.

Explicatio et usus tabularum, p. 73, l. 21. for longitudinis  
read latitudinis.

Page 41. tables. Epoch of moon's agee for 1774 for  
2°. 7°. 22'. 12''. read 2°. 7°. 32'. 12''.

EXTRACT from the Act of Parliament  
concerning the Longitude, made in the  
Fifth Year of the Reign of his present  
Majesty.

**W**HEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from time to time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table or Tables constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorized by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Complaint, or Information, in any of his Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to his Majesty, his Heirs and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same.



**EXTRACT** from the late Act of Parliament concerning the Longitude, made in the Tenth Year of the Reign of his present Majesty.

**B**E it Enacted by the KING's most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That the said Commissioners constituted by the said several Acts before-mentioned for the Discovery of the Longitude at Sea, and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same, or any Five or more of them, shall have full Power to hear and receive any Proposal or Proposals that have been, or that shall hereafter be made to them for discovering the said Longitude at Sea; or for improving the said [Professor Mayer's] Lunar Tables; or for making any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Proposal, as to think it proper to make Experiment thereof, or of the Utility of such Discovery or Improvement, as to think the same deserving of Reward, they shall certify the same under their Hands and Seals to the Commissioners of the Navy for the Time being, together with the Names of the Person or Persons who shall be the Author or Authors of such Proposal or Proposals, or who shall make such Discovery or Discoveries, Improvement or Improvements; and, upon producing such Certificate, the said Commissioners of the Navy are hereby authorized and required to make out a Bill or Bills for any such Sum or Sums of Money, not exceeding in the Whole the Sum of Five thousand Pounds, as the said Commissioners for the Discovery of the said Longitude, or any Five or more of them, shall think necessary for making any Experiments, or for giving any Reward or Rewards, Sum or Sums of Money, to such Person or Persons as shall improve the said Lunar Tables, or shall make any Discovery or Discoveries, Improvement or Improvements useful to Navigation, in pursuance of this Act, or any of the said Acts herein before-mentioned, payable by the Treasurer of the Navy; which Sum or Sums of Money the Treasurer of the Navy for the Time being is hereby authorized and required to pay immediately to the Person or Persons mentioned in the said Certificate or Certificates, out of any Money that shall be in his the said Treasurer's Hands unapplied for the Use of the Navy: Provided always, That if any such Reward or Sum of Money shall exceed the Sum of One thousand Pounds; then, and in that Case, the same shall be certified under the Hands and Seals of the major Part of the said Commissioners for the Discovery of the said Longitude.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea, and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

**W**HEREAS we have employed proper Persons to compute Nautical Almanacs and Astronomical Ephemerides for the Years 1773 and 1774, which will greatly contribute to make the Lunar Tables constructed by the late Professor MAYER of *Gottingen* (which you have already printed with our Authority) more generally useful; and whereas we think fit to employ you to print the said Nautical Almanacs and Astronomical Ephemerides: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to cause the same to be printed, together with such other useful Tables for facilitating the Method of discovering the Longitude at Sea, as shall have been constructed under our Direction, and will be delivered to you by the Reverend Mr. NEVIL MASKELYNE, his Majesty's Astronomer Royal at *Greenwich*; and for so doing this shall be your sufficient Warrant. Given under our Hands and Seals the 2d Day of *March* 1771.

To Mr. WILLIAM  
RICHARDSON,  
Printer in *Salisbury-*  
*court, Fleet-street.*

|              |        |
|--------------|--------|
| SANDWICH     | (L.S.) |
| FL. NORTON   | (L.S.) |
| T. GRIFFIN   | (L.S.) |
| J. FORBES    | (L.S.) |
| T. FRANKLAND | (L.S.) |
| J. WEST      | (L.S.) |
| N. MASKELYNE | (L.S.) |
| T. HORNSBY   | (L.S.) |
| J. SMITH     | (L.S.) |
| E. WARING    | (L.S.) |
| A. SHEPHERD  | (L.S.) |
| P. STEPHENS  | (L.S.) |
| H. FALLISSER | (L.S.) |
| J. SMITH     | (L.S.) |

By Order of the Commissioners,

JOHN IBBETSON, Secretary.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea, and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

**W**HEREAS we think fit to employ you to publish and vend, and to cause to be published and vended, the Nautical Almanacs and Astronomical Ephemerides for the Years 1773 and 1774, together with other useful Tables (constructed under our Direction) for facilitating the Method of discovering the Longitude at Sea, which will be printed by Mr. WILLIAM RICHARDSON of *Salisbury-court, Fleet-street*: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to publish and vend, and to cause to be published and vended, the said Nautical Almanacs and Astronomical Ephemerides, together with the other useful Tables above-mentioned. For which this shall be your sufficient Warrant. Given under our Hands and Seals the 2d Day of *March* 1771.

To Mr. JOHN NOURSE,  
Bookseller in the *Strand*.

SANDWICH (L.S.)  
FL. NORTON (L.S.)  
T. GRIFFIN (L.S.)  
J. FORBES (L.S.)  
T. FRANKLAND (L.S.)  
J. WEST (L.S.)  
N. MASKELYNE (L.S.)  
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J. SMITH (L.S.)  
E. WARING (L.S.)  
A. SHEPHERD (L.S.)  
PH. STEPHENS (L.S.)  
H. PALLISSER (L.S.)  
J. SMITH (L.S.)

By Order of the Commissioners,

JOHN IBBETSON, Secretary.

☞ A Licence was also granted to the like Effect to Mess.  
JOHN MOUNT and THOMAS PAG, Stationers on *Tower-hill*.



# J A N U A R Y 1774.

[1]

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.      | Phases of the Moon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|-------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                   |                             | D. H. M.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1                  | Sa.               | Circumcision.               | Last Quarter— 5. 5. 40<br>New Moon — 11. 20. 45<br>First Quarter— 19. 3. 11<br>Full Moon — 27. 6. 48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2                  | Su.               | 2d Sunday after Christmas.  | <b>D. Other Phenomena.</b><br>1. ☾ ☉ 1 <sup>h</sup> . 33'.<br>3. ☾ ☿ 4 <sup>h</sup> . 39'.<br>☾ ♀ 14 <sup>h</sup> . 55'.<br>4. ☾ ♀ 4 <sup>h</sup> . 55'.<br>5. ☾ ♀ 4 <sup>h</sup> . 46'.<br>♀ Stationary.<br>6. ☾ ♀ 8 <sup>h</sup> . 59'.<br>7. ☾ ♀ 19 <sup>h</sup> . 31'.<br>☾ ♀ 23 <sup>h</sup> . 13'.<br>8. ☾ ♀ 3 <sup>h</sup> . 19'.<br>10. ♀ ♀ diff. Lat. 2'.<br>14. ☾ ♀ 11 <sup>h</sup> . 47'.<br>15. ☾ ♀ 10 <sup>h</sup> . 27'.<br>17. ☾ ♀ 1 <sup>h</sup> . 24'.<br>19. ☉ enters ♀ at 9 <sup>h</sup> . 19'.<br>21. ☾ ♀ 21 <sup>h</sup> . 27'.<br>☾ ♀ 23 <sup>h</sup> . 37'.<br>22. ☾ ♀ 0 <sup>h</sup> . 8'.<br>☾ ♀ Im. 4 <sup>h</sup> . 17'. *<br>2 <sup>1</sup> / <sub>2</sub> N. of ♀'s cent.<br>Em. 5 <sup>h</sup> . 31'. * 0 <sup>1</sup> / <sub>4</sub> N.<br>28. ☾ ♀ 2 <sup>h</sup> . 42'.<br>☾ ♀ 7 <sup>h</sup> . 36'.<br>30. ☾ ♀ 10 <sup>h</sup> . 5'.<br>☾ ♀ 20 <sup>h</sup> . 17'.<br>31. ☾ ♀ 10 <sup>h</sup> . 13'. |
| 3                  | M.                |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4                  | Tu.               |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5                  | W.                |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6                  | Th.               | Epiphany.                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7                  | F.                |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8                  | Sa.               | Lucian.                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9                  | Su.               | 1st Sunday after Epiphany.  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10                 | M.                |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 11                 | Tu.               |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 12                 | W.                |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 13                 | Th.               | Hil. Camb. Ter. begins.     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 14                 | F.                | Oxford Term begins.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 15                 | Sa.               |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 16                 | Su.               | 2d Sunday after Epiphany.   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 17                 | M.                |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 18                 | Tu.               | Q. Charlotte's birth-day    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 19                 | W.                | [kept. Prisca.              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 20                 | Th.               | Fabian. In 8 days of S.     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 21                 | F.                | Agnes. [Hil. 1 ret.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 22                 | Sa.               | Vincent.                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 23                 | Su.               | 3d Sunday after Epiphany.   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 24                 | M.                | Hilary Term begins.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 25                 | Tu.               | Conversion of St. Paul.     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 26                 | W.                |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 27                 | Th.               | From S. Hil. in 15 days     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 28                 | F.                | [2 ret.                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 29                 | Sa.               |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 30                 | Su.               | Septuages. Sund. K. Cha. I. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 31                 | M.                | [martyr'd.                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| [2] J A N U A R Y 1774. |                   |                  |     |        |                           |     |      |                      |     |    |                     |      |       |
|-------------------------|-------------------|------------------|-----|--------|---------------------------|-----|------|----------------------|-----|----|---------------------|------|-------|
| Days of the Month.      | Days of the Week. | Sun's Longitude. |     |        | Sun's Right Asc. in Time. |     |      | Sun's Declin. South. |     |    | Equat. of Time Add. |      | Diff. |
|                         |                   | S.               | D.  | M. S.  | H.                        | M.  | S.   | D.                   | M.  | S. | M.                  | S.   |       |
| 1                       | Sa.               | 9.               | 11. | 15. 35 | 18.                       | 48. | 58,9 | 22.                  | 59. | 17 | 4. 13,3             | 28,1 |       |
| 2                       | Su.               | 9.               | 12. | 16. 45 | 18.                       | 53. | 23,6 | 22.                  | 53. | 54 | 4. 41,4             | 27,7 |       |
| 3                       | M.                | 9.               | 13. | 17. 55 | 18.                       | 57. | 47,9 | 22.                  | 48. | 3  | 5. 9,1              | 27,2 |       |
| 4                       | Tu.               | 9.               | 14. | 19. 6  | 19.                       | 2.  | 11,8 | 22.                  | 41. | 44 | 5. 36,3             | 26,9 |       |
| 5                       | W.                | 9.               | 15. | 20. 16 | 19.                       | 6.  | 35,3 | 22.                  | 35. | 0  | 6. 3,2              | 26,5 |       |
| 6                       | Th.               | 9.               | 16. | 21. 27 | 19.                       | 10. | 58,4 | 22.                  | 27. | 47 | 6. 29,7             | 25,9 |       |
| 7                       | F.                | 9.               | 17. | 22. 38 | 19.                       | 15. | 21,0 | 22.                  | 20. | 8  | 6. 55,6             | 25,5 |       |
| 8                       | Sa.               | 9.               | 18. | 23. 48 | 19.                       | 19. | 43,1 | 22.                  | 12. | 3  | 7. 21,1             | 25,0 |       |
| 9                       | Su.               | 9.               | 19. | 24. 59 | 19.                       | 24. | 4,7  | 22.                  | 3.  | 32 | 7. 46,1             | 24,4 |       |
| 10                      | M.                | 9.               | 20. | 26. 9  | 19.                       | 28. | 25,7 | 21.                  | 54. | 35 | 8. 10,5             | 23,9 |       |
| 11                      | Tu.               | 9.               | 21. | 27. 20 | 19.                       | 32. | 46,2 | 21.                  | 45. | 12 | 8. 34,4             | 23,2 |       |
| 12                      | W.                | 9.               | 22. | 28. 30 | 19.                       | 37. | 6,1  | 21.                  | 35. | 24 | 8. 57,6             | 22,6 |       |
| 13                      | Th.               | 9.               | 23. | 29. 39 | 19.                       | 41. | 25,3 | 21.                  | 25. | 11 | 9. 20,2             | 21,9 |       |
| 14                      | F.                | 9.               | 24. | 30. 47 | 19.                       | 45. | 43,8 | 21.                  | 14. | 33 | 9. 42,1             | 21,3 |       |
| 15                      | Sa.               | 9.               | 25. | 31. 55 | 19.                       | 50. | 1,7  | 21.                  | 3.  | 30 | 10. 3,4             | 20,6 |       |
| 16                      | Su.               | 9.               | 26. | 33. 2  | 19.                       | 54. | 18,9 | 20.                  | 52. | 4  | 10. 24,0            | 19,8 |       |
| 17                      | M.                | 9.               | 27. | 34. 8  | 19.                       | 58. | 35,3 | 20.                  | 40. | 13 | 10. 43,8            | 19,1 |       |
| 18                      | Tu.               | 9.               | 28. | 35. 13 | 20.                       | 2.  | 51,0 | 20.                  | 28. | 0  | 11. 2,9             | 18,3 |       |
| 19                      | W.                | 9.               | 29. | 36. 17 | 20.                       | 7.  | 5,9  | 20.                  | 15. | 23 | 11. 21,2            | 17,5 |       |
| 20                      | Th.               | 10.              | 0.  | 37. 19 | 20.                       | 11. | 20,0 | 20.                  | 2.  | 24 | 11. 38,7            | 16,8 |       |
| 21                      | F.                | 10.              | 1.  | 38. 21 | 20.                       | 15. | 33,4 | 19.                  | 49. | 2  | 11. 55,5            | 16,0 |       |
| 22                      | Sa.               | 10.              | 2.  | 39. 22 | 20.                       | 19. | 46,0 | 19.                  | 35. | 18 | 12. 11,5            | 15,1 |       |
| 23                      | Su.               | 10.              | 3.  | 40. 21 | 20.                       | 23. | 57,7 | 19.                  | 21. | 13 | 12. 26,6            | 14,3 |       |
| 24                      | M.                | 10.              | 4.  | 41. 19 | 20.                       | 28. | 8,7  | 19.                  | 6.  | 46 | 12. 40,9            | 13,5 |       |
| 25                      | Tu.               | 10.              | 5.  | 42. 16 | 20.                       | 32. | 18,8 | 18.                  | 51. | 58 | 12. 54,4            | 12,7 |       |
| 26                      | W.                | 10.              | 6.  | 43. 11 | 20.                       | 36. | 28,0 | 18.                  | 36. | 50 | 13. 7,1             | 11,9 |       |
| 27                      | Th.               | 10.              | 7.  | 44. 6  | 20.                       | 40. | 36,5 | 18.                  | 21. | 22 | 13. 19,0            | 11,1 |       |
| 28                      | F.                | 10.              | 8.  | 44. 59 | 20.                       | 44. | 44,2 | 18.                  | 5.  | 34 | 13. 30,1            | 10,2 |       |
| 29                      | Sa.               | 10.              | 9.  | 45. 52 | 20.                       | 48. | 51,0 | 17.                  | 49. | 26 | 13. 40,3            | 9,5  |       |
| 30                      | Su.               | 10.              | 10. | 46. 44 | 20.                       | 52. | 57,0 | 17.                  | 33. | 0  | 13. 49,8            | 8,6  |       |
| 31                      | M.                | 10.              | 11. | 47. 34 | 20.                       | 57. | 2,2  | 17.                  | 16. | 14 | 13. 58,4            | 7,8  |       |

# J A N U A R Y 1774. [3]

| Days of the Month. | Semidia-<br>meter of<br>the Sun. | Time of Do<br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of the<br>Moon's<br>Node. |
|--------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|                    | M. S.                            | M. S.                                  | M. S.                              |                                        | S. D. M.                        |
| 1                  | 16. 19. 2                        | 1. 10. 9                               | 2. 32. 9                           | 9. 992633                              | 5. 26. 4                        |
| 7                  | 16. 19. 1                        | 1. 10. 6                               | 2. 32. 8                           | 9. 992725                              | 5. 25. 45                       |
| 13                 | 16. 18. 8                        | 1. 10. 1                               | 2. 32. 8                           | 9. 992885                              | 5. 25. 26                       |
| 19                 | 16. 18. 2                        | 1. 9. 5                                | 2. 32. 6                           | 9. 993102                              | 5. 25. 6                        |
| 25                 | 16. 17. 5                        | 1. 8. 9                                | 2. 32. 3                           | 9. 993391                              | 5. 24. 47                       |

## Eclipses of the SATELLITES of J U P I T E R.

| I. Satellite.<br>Emerfions. |                       | II. Satellite.<br>Emerfions. |                       | III. Satellite.      |                         |
|-----------------------------|-----------------------|------------------------------|-----------------------|----------------------|-------------------------|
| Days                        | H. M. S.              | Days                         | H. M. S.              | Days                 | H. M. S.                |
| 2                           | 9 <sup>*</sup> 33. 39 | 3                            | 1. 7. 47              | 6                    | 0. 15. 0 I              |
| 4                           | 4. 1. 49              | 6                            | 14. 24. 19            | 6                    | 2. 28. 38 E             |
| 5                           | 22. 30. 1             | 10                           | 3. 40. 57             | 13                   | 4. 15. 15 I             |
| 7                           | 16. 58. 13            | 13                           | 16. 57. 37            | 13                   | 6 <sup>*</sup> 27. 27 E |
| 9                           | 11. 26. 28            | 17                           | 6 <sup>*</sup> 14. 29 | 20                   | 8 <sup>*</sup> 16. 9 I  |
| 11                          | 5 <sup>*</sup> 54. 46 | 20                           | 19. 31. 28            | 20                   | 10. 26. 57 E            |
| 13                          | 0. 23. 3              | 24                           | 8 <sup>*</sup> 48. 33 | 27                   | 12. 17. 37 I            |
| 14                          | 18. 51. 26            | 27                           | 22. 5. 51             | 27                   | 14. 27. 1 E             |
| 16                          | 13. 19. 50            | 31                           | 11. 23. 10            |                      |                         |
| 18                          | 7 <sup>*</sup> 48. 15 |                              |                       | IV. Satellite. Conj. |                         |
| 20                          | 2. 16. 41             |                              |                       |                      |                         |
| 21                          | 20. 45. 10            |                              |                       | 6                    | 14. 14 Inf.             |
| 23                          | 15. 13. 40            |                              |                       | 14                   | 23. 20 Sup.             |
| 25                          | 9. 42. 15             |                              |                       | 23                   | 8 <sup>*</sup> 27 Inf.  |
| 27                          | 4. 10. 51             |                              |                       | 31                   | 17. 34 Sup.             |
| 28                          | 22. 39. 32            |                              |                       |                      |                         |
| 30                          | 17. 8. 12             |                              |                       |                      |                         |



[4] J A N U A R Y 1774.

| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric La-<br>titude. | Declina-<br>tion. | Passage<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|---------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                     |

M E R C U R Y. Gr. Elong. 11<sup>d</sup>.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 5. 3. 35  | 6. 39 N | 8. 21. 7  | 2. 54 N | 20. 16 S | 22. 32 |
| 7  | 5. 29. 22 | 5. 5    | 8. 24. 5  | 2. 7    | 21. 13   | 22. 19 |
| 13 | 6. 20. 58 | 2. 57   | 8. 29. 52 | 1. 11   | 22. 17   | 22. 19 |
| 19 | 7. 9. 50  | 0. 44 N | 9. 7. 8   | 0. 17 N | 22. 59   | 22. 25 |
| 25 | 7. 27. 6  | 1. 22 S | 9. 15. 16 | 0. 31 S | 23. 6    | 22. 35 |

V E N U S. Gr. Elong. 10<sup>d</sup>.

|    |           |         |            |         |          |       |
|----|-----------|---------|------------|---------|----------|-------|
| 1  | 1. 21. 48 | 1. 19 S | 10. 28. 8  | 1. 16 S | 13. 19 S | 3. 14 |
| 7  | 2. 1. 27  | 0. 46   | 11. 4. 29  | 0. 47   | 10. 37   | 3. 11 |
| 13 | 2. 11. 7  | 0. 11 S | 11. 10. 34 | 0. 12 S | 7. 47    | 3. 7  |
| 19 | 2. 20. 48 | 0. 22 N | 11. 16. 26 | 0. 26 N | 4. 58    | 3. 2  |
| 25 | 3. 0. 30  | 0. 56   | 11. 21. 56 | 1. 10   | 2. 8     | 2. 56 |

M A R S.  $\delta$  20<sup>h</sup>. 15<sup>h</sup> 3<sup>h</sup>.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 9. 19. 41 | 1. 38 S | 9. 16. 14 | 0. 58 S | 23. 26 S | 0. 22  |
| 7  | 9. 23. 21 | 1. 41   | 9. 20. 53 | 0. 59   | 22. 49   | 0. 16  |
| 13 | 9. 27. 1  | 1. 44   | 9. 25. 34 | 1. 1    | 22. 3    | 0. 10  |
| 19 | 10. 0. 44 | 1. 46   | 10. 0. 16 | 1. 2    | 21. 8    | 0. 4   |
| 25 | 10. 4. 27 | 1. 48   | 10. 4. 58 | 1. 3    | 20. 4    | 23. 58 |

J U P I T E R.

|    |           |         |          |         |         |       |
|----|-----------|---------|----------|---------|---------|-------|
| 1  | 0. 13. 7  | 1. 19 S | 0. 1. 49 | 1. 18 S | 0. 28 S | 5. 19 |
| 7  | 0. 13. 40 | 1. 19   | 0. 2. 35 | 1. 16   | 0. 8 S  | 4. 55 |
| 13 | 0. 14. 13 | 1. 19   | 0. 3. 27 | 1. 15   | 0. 14 N | 4. 33 |
| 19 | 0. 14. 46 | 1. 19   | 0. 4. 24 | 1. 14   | 0. 38   | 4. 10 |
| 25 | 0. 15. 19 | 1. 19   | 0. 5. 25 | 1. 12   | 1. 3    | 3. 49 |

S A T U R N.

|    |           |        |           |         |         |        |
|----|-----------|--------|-----------|---------|---------|--------|
| 1  | 5. 20. 22 | 2. 9 N | 5. 26. 10 | 2. 13 N | 3. 33 N | 16. 57 |
| 7  | 5. 20. 35 | 2. 9   | 5. 26. 10 | 2. 15   | 3. 35   | 16. 31 |
| 13 | 5. 20. 48 | 2. 9   | 5. 26. 7  | 2. 16   | 3. 38   | 16. 5  |
| 19 | 5. 21. 0  | 2. 9   | 5. 25. 59 | 2. 18   | 3. 42   | 15. 39 |
| 25 | 5. 21. 12 | 2. 10  | 5. 25. 48 | 2. 20   | 3. 48   | 15. 13 |

# J A N U A R Y 1774.

[5]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D.M.S.                   |
| 1                  | Sa.               | 4. 20. 17. 32             | 4. 26. 35. 51                 | 2. 52. 13 S              | 2. 23. 52 S              |
| 2                  | Su.               | 5. 2. 57. 0               | 5. 9. 21. 22                  | 1. 53. 29                | 1. 21. 22                |
| 3                  | M.                | 5. 15. 49. 9              | 5. 22. 20. 46                 | 0. 47. 53 S              | 0. 13. 26 S              |
| 4                  | Tu.               | 5. 28. 56. 32             | 6. 5. 36. 44                  | 0. 21. 37 N              | 0. 56. 47 N              |
| 5                  | W.                | 6. 12. 21. 42             | 6. 19. 11. 49                 | 1. 31. 35                | 2. 5. 31                 |
| 6                  | Th.               | 6. 26. 7. 8               | 7. 3. 7. 52                   | 2. 38. 3                 | 3. 8. 35                 |
| 7                  | F.                | 7. 10. 14. 3              | 7. 17. 25. 24                 | 3. 36. 38                | 4. 1. 33                 |
| 8                  | Sa.               | 7. 24. 41. 46             | 8. 2. 2. 40                   | 4. 22. 55                | 4. 40. 6                 |
| 9                  | Su.               | 8. 9. 27. 27              | 8. 16. 55. 14                 | 4. 52. 46                | 5. 0. 31                 |
| 10                 | M.                | 8. 24. 25. 3              | 9. 1. 55. 40                  | 5. 3. 11                 | 5. 0. 35                 |
| 11                 | Tu.               | 9. 9. 25. 59              | 9. 16. 54. 43                 | 4. 52. 49                | 4. 40. 3                 |
| 12                 | W.                | 9. 24. 20. 36             | 10. 1. 42. 36                 | 4. 22. 33                | 4. 0. 48                 |
| 13                 | Th.               | 10. 8. 59. 41             | 10. 16. 10. 54                | 3. 35. 20                | 3. 6. 45                 |
| 14                 | F.                | 10. 23. 15. 47            | 11. 0. 13. 54                 | 2. 35. 35                | 2. 2. 31                 |
| 15                 | Sa.               | 11. 7. 5. 6               | 11. 13. 49. 12                | 1. 28. 9                 | 0. 53. 11 N              |
| 16                 | Su.               | 11. 20. 26. 26            | 11. 26. 57. 4                 | 0. 18. 1 N               | 0. 16. 58 S              |
| 17                 | M.                | 0. 3. 21. 35              | 0. 9. 40. 20                  | 0. 51. 7 S               | 1. 24. 10                |
| 18                 | Tu.               | 0. 15. 54. 1              | 0. 22. 3. 5                   | 1. 55. 47                | 2. 25. 37                |
| 19                 | W.                | 0. 28. 8. 19              | 1. 4. 10. 20                  | 2. 53. 33                | 3. 19. 13                |
| 20                 | Th.               | 1. 10. 9. 45              | 1. 16. 7. 13                  | 3. 42. 32                | 4. 3. 18                 |
| 21                 | F.                | 1. 22. 3. 26              | 1. 27. 58. 54                 | 4. 21. 23                | 4. 36. 34                |
| 22                 | Sa.               | 2. 3. 54. 13              | 2. 9. 49. 53                  | 4. 48. 46                | 4. 57. 52                |
| 23                 | Su.               | 2. 15. 46. 29             | 2. 21. 44. 15                 | 5. 3. 48                 | 5. 6. 26                 |
| 24                 | M.                | 2. 27. 43. 40             | 3. 3. 45. 8                   | 5. 5. 45                 | 5. 1. 39                 |
| 25                 | Tu.               | 3. 9. 48. 40              | 3. 15. 54. 38                 | 4. 54. 8                 | 4. 43. 15                |
| 26                 | W.                | 3. 22. 3. 4               | 3. 28. 14. 15                 | 4. 28. 57                | 4. 11. 27                |
| 27                 | Th.               | 4. 4. 28. 7               | 4. 10. 44. 47                 | 3. 50. 44                | 3. 27. 6                 |
| 28                 | F.                | 4. 17. 4. 16              | 4. 23. 26. 32                 | 3. 0. 42                 | 2. 31. 50                |
| 29                 | Sa.               | 4. 29. 51. 34             | 5. 6. 19. 30                  | 2. 0. 45                 | 1. 27. 51                |
| 30                 | Su.               | 5. 12. 50. 16             | 5. 19. 23. 55                 | 0. 53. 32 S              | 0. 18. 13 S              |
| 31                 | M.                | 5. 26. 0. 30              | 6. 2. 40. 3                   | 0. 17. 40 N              | 0. 53. 35 N              |

[6] J A N U A R Y 1774.

| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Ascen. at Midn. | D's Declinat. at Noon. | D's Declinat. at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                     | D. M.                  | D. M.                  |
| 1                  | Sa.               | 20       | 15. 7                   | 141. 46                   | 148. 0                    | 11. 59 N               | 10. 25 N               |
| 2                  | Sa.               | 21       | 15. 53                  | 154. 13                   | 160. 25                   | 8. 40                  | 6. 49                  |
| 3                  | M.                | 22       | 16. 40                  | 166. 39                   | 172. 53                   | 4. 52                  | 2. 50 N                |
| 4                  | Tu.               | 23       | 17. 29                  | 179. 10                   | 185. 32                   | 0. 45 N                | 1. 22 S                |
| 5                  | W.                | 24       | 18. 19                  | 191. 58                   | 198. 51                   | 3. 29 S                | 5. 35                  |
| 6                  | Th.               | 25       | 19. 11                  | 205. 11                   | 212. 0                    | 7. 39                  | 9. 37                  |
| 7                  | F.                | 26       | 20. 5                   | 218. 58                   | 226. 7                    | 11. 29                 | 13. 11                 |
| 8                  | Sa.               | 27       | 21. 3                   | 233. 26                   | 240. 55                   | 14. 43                 | 16. 1                  |
| 9                  | Sa.               | 28       | 22. 4                   | 248. 33                   | 256. 18                   | 17. 4                  | 17. 50                 |
| 10                 | M.                | 29       | 23. 5                   | 264. 9                    | 272. 1                    | 18. 18                 | 18. 27                 |
| 11                 | Tu.               | 1        | 0                       | 279. 53                   | 287. 43                   | 18. 16                 | 17. 46                 |
| 12                 | W.                | 2        | 0. 5                    | 295. 27                   | 303. 2                    | 16. 58                 | 15. 53                 |
| 13                 | Th.               | 3        | 1. 3                    | 310. 27                   | 317. 41                   | 14. 34                 | 13. 2                  |
| 14                 | F.                | 4        | 1. 57                   | 324. 44                   | 331. 35                   | 11. 20                 | 9. 29                  |
| 15                 | Sa.               | 5        | 2. 48                   | 338. 15                   | 344. 45                   | 7. 33                  | 5. 33                  |
| 16                 | Sa.               | 6        | 3. 37                   | 351. 6                    | 357. 19                   | 3. 31 S                | 1. 28 S                |
| 17                 | M.                | 7        | 4. 23                   | 3. 25                     | 9. 26                     | 0. 33 N                | 2. 33 N                |
| 18                 | Tu.               | 8        | 5. 8                    | 15. 24                    | 21. 18                    | 4. 29                  | 6. 20                  |
| 19                 | W.                | 9        | 5. 52                   | 27. 11                    | 33. 3                     | 8. 7                   | 9. 48                  |
| 20                 | Th.               | 10       | 6. 36                   | 38. 56                    | 44. 51                    | 11. 21                 | 12. 47                 |
| 21                 | F.                | 11       | 7. 21                   | 50. 47                    | 56. 47                    | 14. 5                  | 15. 14                 |
| 22                 | Sa.               | 12       | 8. 7                    | 62. 50                    | 68. 57                    | 16. 13                 | 17. 2                  |
| 23                 | Sa.               | 13       | 8. 54                   | 75. 7                     | 81. 20                    | 17. 40                 | 18. 7                  |
| 24                 | M.                | 14       | 9. 42                   | 87. 37                    | 93. 56                    | 18. 21                 | 18. 23                 |
| 25                 | Tu.               | 15       | 10. 30                  | 100. 18                   | 106. 41                   | 18. 12                 | 17. 50                 |
| 26                 | W.                | 16       | 11. 18                  | 113. 5                    | 119. 28                   | 17. 14                 | 16. 26                 |
| 27                 | Th.               | 17       | 12. 6                   | 125. 51                   | 132. 14                   | 15. 26                 | 14. 14                 |
| 28                 | F.                | 18       | 12. 54                  | 138. 35                   | 144. 55                   | 12. 52                 | 11. 20                 |
| 29                 | Sa.               | 19       | 13. 42                  | 151. 15                   | 157. 33                   | 9. 39                  | 7. 50                  |
| 30                 | Sa.               | 20       | 14. 30                  | 163. 50                   | 170. 8                    | 5. 55                  | 3. 55 N                |
| 31                 | M.                | 21       | 15. 18                  | 176. 27                   | 182. 49                   | 1. 51                  | 0. 14 S                |



# JANUARY 1774.

[7]

| Days of the Month. | Days of the Week. | Semidr.<br>D at Noon. | Semidr.<br>D at Midnight. | Hor. Par.<br>D at Noon. | Hor. Par.<br>D at Midnight. | Propor. Lo-<br>car. at Noon. | Propor. Lo-<br>car. at Mid. |
|--------------------|-------------------|-----------------------|---------------------------|-------------------------|-----------------------------|------------------------------|-----------------------------|
|                    |                   | M. S.                 | M. S.                     | M. S.                   | M. S.                       |                              |                             |
| 1                  | Sa.               | 15. 14                | 15. 18                    | 55. 54                  | 56. 9                       | 5079                         | 5059                        |
| 2                  | Su.               | 15. 23                | 15. 27                    | 56. 26                  | 56. 43                      | 5037                         | 5015                        |
| 3                  | M.                | 15. 32                | 15. 37                    | 57. 1                   | 57. 20                      | 4992                         | 4968                        |
| 4                  | Tu.               | 15. 43                | 15. 48                    | 57. 40                  | 58. 1                       | 4943                         | 4917                        |
| 5                  | W.                | 15. 54                | 16. 0                     | 58. 21                  | 58. 42                      | 4892                         | 4866                        |
| 6                  | Th.               | 16. 5                 | 16. 11                    | 59. 3                   | 59. 23                      | 4841                         | 4816                        |
| 7                  | F.                | 16. 16                | 16. 21                    | 59. 42                  | 60. 0                       | 4793                         | 4771                        |
| 8                  | Sa.               | 16. 25                | 16. 29                    | 60. 16                  | 60. 29                      | 4752                         | 4736                        |
| 9                  | Su.               | 16. 32                | 16. 34                    | 60. 40                  | 60. 47                      | 4723                         | 4715                        |
| 10                 | M.                | 16. 35                | 16. 35                    | 60. 51                  | 60. 50                      | 4710                         | 4711                        |
| 11                 | Tu.               | 16. 34                | 16. 31                    | 60. 46                  | 60. 38                      | 4716                         | 4725                        |
| 12                 | W.                | 16. 28                | 16. 24                    | 60. 25                  | 60. 9                       | 4741                         | 4760                        |
| 13                 | Th.               | 16. 18                | 16. 12                    | 59. 50                  | 59. 27                      | 4783                         | 4811                        |
| 14                 | F.                | 16. 5                 | 15. 59                    | 59. 3                   | 58. 37                      | 4841                         | 4872                        |
| 15                 | Sa.               | 15. 51                | 15. 44                    | 58. 10                  | 57. 43                      | 4906                         | 4940                        |
| 16                 | Su.               | 15. 36                | 15. 29                    | 57. 16                  | 56. 50                      | 4973                         | 5006                        |
| 17                 | M.                | 15. 22                | 15. 16                    | 56. 25                  | 56. 2                       | 5038                         | 5068                        |
| 18                 | Tu.               | 15. 10                | 15. 5                     | 55. 41                  | 55. 22                      | 5095                         | 5120                        |
| 19                 | W.                | 15. 1                 | 14. 57                    | 55. 5                   | 54. 51                      | 5142                         | 5161                        |
| 20                 | Th.               | 14. 54                | 14. 51                    | 54. 39                  | 54. 30                      | 5177                         | 5189                        |
| 21                 | F.                | 14. 50                | 14. 48                    | 54. 23                  | 54. 19                      | 5198                         | 5203                        |
| 22                 | Sa.               | 14. 48                | 14. 48                    | 54. 17                  | 54. 17                      | 5206                         | 5206                        |
| 23                 | Su.               | 14. 48                | 14. 49                    | 54. 20                  | 54. 24                      | 5202                         | 5197                        |
| 24                 | M.                | 14. 51                | 14. 53                    | 54. 31                  | 54. 38                      | 5187                         | 5178                        |
| 25                 | Tu.               | 14. 56                | 14. 59                    | 54. 48                  | 54. 58                      | 5165                         | 5152                        |
| 26                 | W.                | 15. 2                 | 15. 6                     | 55. 10                  | 55. 23                      | 5136                         | 5119                        |
| 27                 | Th.               | 15. 9                 | 15. 13                    | 55. 36                  | 55. 50                      | 5102                         | 5084                        |
| 28                 | F.                | 15. 17                | 15. 21                    | 56. 5                   | 56. 20                      | 5064                         | 5045                        |
| 29                 | Sa.               | 15. 25                | 15. 29                    | 56. 35                  | 56. 50                      | 5026                         | 5006                        |
| 30                 | Su.               | 15. 33                | 15. 37                    | 57. 5                   | 57. 19                      | 4987                         | 4970                        |
| 31                 | M.                | 15. 41                | 15. 45                    | 57. 34                  | 57. 48                      | 4951                         | 4933                        |

[8] JANUARY 1774.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days.      | Stars Names.      | Noon.                    | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|------------|-------------------|--------------------------|-------------|-------------|-------------|
|            |                   | D. M. S.                 | D. M. S.    | D. M. S.    | D. M. S.    |
| 1          | Spica $\pi$       | 60. 20. 26               | 58. 46. 18  | 57. 12. 0   | 55. 37. 32  |
| 2          |                   | 47. 42. 33               | 46. 6. 59   | 44. 31. 13  | 42. 55. 16  |
| 3          |                   | 34. 52. 47               | 33. 15. 45  | 31. 38. 33  | 30. 1. 10   |
| 4          | Antares.          | 67. 46. 1                | 66. 7. 35   | 64. 28. 55  | 62. 50. 1   |
| 5          |                   | 54. 32. 5                | 52. 51. 50  | 51. 11. 23  | 49. 30. 43  |
| 3          | The Sun.          | 117. 28. 36              | 115. 58. 47 | 114. 28. 42 | 112. 58. 21 |
| 4          |                   | 105. 22. 32              | 103. 50. 33 | 102. 18. 16 | 100. 45. 43 |
| 5          |                   | 92. 58. 30               | 91. 24. 8   | 89. 49. 28  | 88. 14. 29  |
| 6          |                   | 80. 14. 55               | 78. 38. 4   | 77. 0. 55   | 75. 23. 27  |
| 7          |                   | 67. 11. 27               | 65. 32. 10  | 63. 52. 36  | 62. 12. 45  |
| 8          |                   | 53. 49. 25               | 52. 7. 59   | 50. 26. 20  | 48. 44. 28  |
| 9          |                   | 40. 12. 21               |             |             |             |
| 13         | $\alpha$ Arietis. | 84. 57. 50               | 83. 12. 20  | 81. 27. 14  | 79. 42. 30  |
| 14         |                   | 71. 4. 50                | 69. 22. 37  | 67. 40. 53  | 65. 59. 38  |
| 15         |                   | 57. 40. 52               | 56. 2. 44   | 54. 25. 10  | 52. 48. 11  |
| 16         |                   | 44. 52. 34               | 43. 19. 26  | 41. 47. 0   | 40. 15. 21  |
| 17         |                   | 32. 49. 40               |             |             |             |
| 17         | Aldebaran.        | 63. 19. 12               | 61. 48. 40  | 60. 8. 28   | 58. 33. 37  |
| 18         |                   | 50. 44. 17               | 49. 11. 22  | 47. 38. 44  | 46. 6. 23   |
| 19         |                   | 38. 28. 27               | 36. 57. 34  | 35. 26. 53  | 33. 56. 24  |
| 20         |                   | 26. 26. 42               | 24. 57. 14  | 23. 27. 53  | 21. 58. 40  |
| 21         | Pollux.           | 58. 59. 9                | 57. 32. 46  | 56. 6. 31   | 54. 40. 24  |
| 22         |                   | 47. 31. 38               | 46. 6. 16   | 44. 41. 3   | 43. 15. 59  |
| 23         |                   | 36. 13. 19               |             |             |             |
| 23         | Regulus.          | 71. 2. 29                | 69. 33. 38  | 68. 4. 43   | 66. 35. 42  |
| 24         |                   | 59. 9. 8                 | 57. 39. 27  | 56. 9. 39   | 54. 39. 43  |
| 25         |                   | 47. 8. 7                 | 45. 37. 21  | 44. 6. 26   | 42. 35. 22  |
| 26         |                   | 34. 57. 44               | 33. 25. 43  | 31. 53. 32  | 30. 21. 12  |
| 27         |                   | 22. 37. 27               |             |             |             |
| 27         | Spica $\pi$       | 76. 7. 24                | 74. 33. 50  | 73. 0. 4    | 71. 26. 7   |
| 28         |                   | 63. 33. 31               | 61. 58. 26  | 60. 23. 11  | 58. 47. 44  |
| 29         |                   | 50. 47. 55               | 49. 11. 25  | 47. 34. 45  | 45. 57. 55  |
| 30         |                   | 37. 51. 29               | 36. 13. 47  | 34. 35. 57  | 32. 58. 1   |
| 31         |                   | 24. 47. 20               |             |             |             |
| 31<br>F. 1 | Antares.          | 70. 41. 13<br>57. 29. 45 | 69. 2. 48   | 67. 24. 13  | 65. 45. 29  |

# J A N U A R Y 1774.

[9]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.      | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|-------|-------------------|-------------|-------------|-------------|-------------|
|       |                   | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | Spica $\alpha$    | 54. 2. 54   | 52. 28. 5   | 50. 53. 6   | 49. 17. 55  |
| 2     |                   | 41. 19. 8   | 39. 42. 49  | 38. 6. 19   | 36. 29. 38  |
| 3     |                   | 28. 23. 37  |             |             |             |
| 3     | Antares.          | 74. 17. 25  | 72. 39. 55  | 71. 2. 11   | 69. 24. 13  |
| 4     |                   | 61. 10. 53  | 59. 31. 31  | 57. 51. 56  | 56. 12. 7   |
| 5     |                   | 47. 49. 50  |             |             |             |
| 2     | The Sun.          |             |             | 120. 27. 28 | 118. 58. 10 |
| 3     |                   | 111. 27. 44 | 109. 56. 51 | 108. 25. 41 | 106. 54. 15 |
| 4     |                   | 99. 12. 52  | 97. 39. 44  | 96. 6. 17   | 94. 32. 33  |
| 5     |                   | 86. 39. 11  | 85. 3. 35   | 83. 27. 40  | 81. 51. 27  |
| 6     |                   | 73. 45. 40  | 72. 7. 34   | 70. 29. 10  | 68. 50. 28  |
| 7     |                   | 60. 32. 37  | 58. 52. 12  | 57. 11. 32  | 55. 30. 36  |
| 8     |                   | 47. 2. 23   | 45. 20. 7   | 43. 37. 41  | 41. 55. 6   |
| 13    | $\alpha$ Arietis. | 77. 58. 8   | 76. 14. 10  | 74. 30. 38  | 72. 47. 31  |
| 14    |                   | 64. 18. 51  | 62. 38. 34  | 60. 58. 48  | 59. 19. 34  |
| 15    |                   | 51. 11. 49  | 49. 36. 3   | 48. 0. 53   | 46. 26. 23  |
| 16    |                   | 38. 44. 29  | 37. 14. 27  | 35. 45. 17  | 34. 17. 1   |
| 17    | Aldebaran.        | 56. 59. 6   | 55. 24. 55  | 53. 51. 4   | 52. 17. 31  |
| 18    |                   | 44. 34. 19  | 43. 2. 29   | 41. 30. 54  | 39. 59. 33  |
| 19    |                   | 32. 26. 7   | 30. 56. 1   | 29. 26. 5   | 27. 56. 19  |
| 20    |                   | 20. 24. 34  |             |             |             |
| 20    | Pollux.           | 64. 40. 3   | 63. 19. 7   | 61. 52. 19  | 60. 25. 40  |
| 21    |                   | 53. 14. 24  | 51. 48. 31  | 50. 22. 45  | 48. 57. 8   |
| 22    |                   | 41. 51. 5   | 40. 26. 21  | 39. 1. 49   | 37. 37. 28  |
| 23    | Regulus.          | 65. 6. 36   | 63. 37. 24  | 62. 8. 5    | 60. 38. 40  |
| 24    |                   | 53. 9. 39   | 51. 39. 29  | 50. 9. 10   | 48. 38. 43  |
| 25    |                   | 41. 4. 8    | 39. 32. 46  | 38. 1. 15   | 36. 29. 34  |
| 26    |                   | 28. 48. 43  | 27. 16. 6   | 25. 43. 21  | 24. 10. 28  |
| 27    | Spica $\alpha$    | 69. 51. 58  | 68. 17. 38  | 66. 43. 7   | 65. 8. 24   |
| 28    |                   | 57. 12. 7   | 55. 36. 20  | 54. 0. 22   | 52. 24. 14  |
| 29    |                   | 44. 20. 55  | 42. 43. 46  | 41. 6. 29   | 39. 29. 3   |
| 30    |                   | 31. 20. 0   | 29. 41. 54  | 28. 3. 46   | 26. 25. 34  |
| 31    | Antares.          | 64. 6. 35   | 62. 27. 33  | 60. 48. 24  | 59. 9. 8    |



| [10] J A N U A R Y 1774.                                                   |                   |             |             |             |             |
|----------------------------------------------------------------------------|-------------------|-------------|-------------|-------------|-------------|
| Distances of $\gamma$ 's Center from $\odot$ , and from Stars west of her. |                   |             |             |             |             |
| Days.                                                                      | Stars Names.      | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|                                                                            |                   | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1                                                                          | Pollux.           | 31. 36. 22  | 33. 4. 26   | 34. 33. 6   | 36. 2. 22   |
| 2                                                                          |                   | 43. 36. 40  | 45. 8. 56   | 46. 41. 35  | 48. 14. 38  |
| 3                                                                          |                   | 56. 5. 28   |             |             |             |
| 3                                                                          | Regulus.          | 19. 9. 57   | 20. 46. 50  | 22. 24. 5   | 24. 1. 41   |
| 4                                                                          |                   | 32. 14. 51  | 33. 54. 27  | 35. 34. 22  | 37. 14. 35  |
| 5                                                                          |                   | 45. 40. 20  | 47. 22. 28  | 49. 4. 55   | 50. 47. 41  |
| 6                                                                          |                   | 59. 26. 15  | 61. 10. 56  | 62. 55. 56  | 64. 41. 15  |
| 7                                                                          |                   | 73. 32. 41  |             |             |             |
| 7                                                                          | Spica $\mu$       | 20. 20. 4   | 22. 5. 11   | 23. 50. 52  | 25. 37. 4   |
| 8                                                                          |                   | 34. 34. 55  | 36. 23. 37  | 38. 12. 38  | 40. 1. 58   |
| 9                                                                          |                   | 49. 12. 35  | 51. 3. 23   | 52. 54. 23  | 54. 45. 33  |
| 10                                                                         |                   | 64. 3. 18   | 65. 55. 6   | 67. 46. 57  | 69. 38. 50  |
| 15                                                                         | The Sun.          | 41. 34. 28  | 43. 8. 13   | 44. 41. 35  | 46. 14. 33  |
| 16                                                                         |                   | 53. 53. 28  | 55. 24. 3   | 56. 54. 15  | 58. 24. 5   |
| 17                                                                         |                   | 65. 47. 38  | 67. 15. 14  | 68. 42. 30  | 70. 9. 25   |
| 18                                                                         |                   | 77. 19. 16  | 78. 44. 18  | 80. 9. 3    | 81. 33. 32  |
| 19                                                                         |                   | 88. 32. 9   | 89. 55. 12  | 91. 18. 3   | 92. 40. 42  |
| 20                                                                         |                   | 99. 31. 15  | 100. 52. 53 | 102. 14. 24 | 103. 35. 48 |
| 21                                                                         |                   | 110. 21. 24 | 111. 42. 18 | 113. 3. 8   | 114. 23. 56 |
| 22                                                                         |                   | 121. 7. 31  |             |             |             |
| 19                                                                         | Fomal-<br>haut.   | 58. 43. 4   | 60. 4. 3    | 61. 25. 6   | 62. 46. 14  |
| 20                                                                         |                   | 69. 32. 40  | 70. 54. 4   | 72. 15. 28  | 73. 36. 54  |
| 21                                                                         | $\alpha$ Pegasi.  | 65. 8. 47   | 66. 31. 41  | 67. 54. 39  | 69. 17. 40  |
| 22                                                                         |                   | 76. 13. 57  | 77. 37. 25  | 79. 0. 58   | 80. 24. 35  |
| 23                                                                         | $\alpha$ Arietis. | 43. 46. 11  | 45. 10. 14  | 46. 34. 35  | 47. 59. 15  |
| 24                                                                         |                   | 55. 6. 42   | 56. 32. 59  | 57. 59. 30  | 59. 26. 16  |
| 25                                                                         | Aldeba-<br>ran.   | 33. 2. 27   | 34. 33. 24  | 36. 4. 31   | 37. 35. 48  |
| 26                                                                         |                   | 45. 14. 43  | 46. 47. 3   | 48. 19. 35  | 49. 52. 18  |
| 27                                                                         |                   | 57. 38. 43  | 59. 12. 35  | 60. 46. 39  | 62. 20. 54  |
| 28                                                                         |                   | 70. 15. 7   |             |             |             |
| 28                                                                         | Pollux.           | 28. 36. 16  | 30. 3. 55   | 31. 32. 21  | 33. 1. 32   |
| 29                                                                         |                   | 40. 37. 2   | 42. 9. 42   | 43. 42. 49  | 45. 16. 22  |
| 30                                                                         |                   | 53. 9. 32   |             |             |             |
| 30                                                                         | Regulus.          | 10. 11. 49  | 17. 49. 5   | 19. 26. 41  | 21. 4. 37   |
| 31                                                                         |                   | 20. 18. 43  | 30. 58. 16  | 32. 38. 3   | 34. 18. 3   |
| 6. 1                                                                       |                   | 42. 41. 17  |             |             |             |

# JANUARY 1774.

[11]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

| Days. | Stars Names.      | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|-------|-------------------|-------------|-------------|-------------|-------------|
|       |                   | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | Pollux.           | 37. 32. 12  | 39. 2. 34   | 40. 33. 27  | 42. 4. 50   |
| 2     |                   | 49. 48. 6   | 51. 21. 56  | 52. 56. 6   | 54. 30. 37  |
| 3     | Regulus.          | 25. 39. 39  | 27. 17. 57  | 28. 56. 35  | 30. 35. 33  |
| 4     |                   | 38. 55. 6   | 40. 35. 56  | 42. 17. 5   | 43. 58. 33  |
| 5     |                   | 52. 30. 46  | 54. 14. 10  | 55. 57. 52  | 57. 41. 54  |
| 6     |                   | 66. 26. 51  | 68. 12. 52  | 69. 59. 9   | 71. 45. 46  |
| 7     | Spica $\mu$       | 27. 23. 46  | 29. 10. 56  | 30. 58. 32  | 32. 46. 32  |
| 8     |                   | 41. 51. 35  | 43. 41. 28  | 45. 31. 37  | 47. 22. 0   |
| 9     |                   | 56. 36. 51  | 58. 28. 18  | 60. 19. 53  | 62. 11. 33  |
| 10    |                   | 71. 30. 44  |             |             |             |
| 14    | The Sun.          |             |             | 38. 25. 49  | 40. 0. 20   |
| 15    |                   | 47. 47. 8   | 49. 19. 18  | 50. 51. 5   | 52. 22. 28  |
| 16    |                   | 59. 53. 31  | 61. 22. 35  | 62. 51. 18  | 64. 19. 39  |
| 17    |                   | 71. 36. 0   | 73. 2. 17   | 74. 28. 15  | 75. 53. 55  |
| 18    |                   | 82. 57. 44  | 84. 21. 41  | 85. 45. 24  | 87. 8. 53   |
| 19    |                   | 94. 3. 9    | 95. 25. 25  | 96. 47. 31  | 98. 9. 28   |
| 20    |                   | 104. 57. 5  | 106. 18. 17 | 107. 39. 24 | 109. 0. 26  |
| 21    |                   | 115. 44. 41 | 117. 5. 24  | 118. 26. 7  | 119. 46. 49 |
| 19    | Fomalhaut.        | 64. 7. 25   | 65. 28. 40  | 66. 49. 58  | 68. 11. 18  |
| 20    |                   | 74. 58. 19  |             |             |             |
| 20    | $\alpha$ Pegasi.  | 59. 38. 2   | 61. 0. 36   | 62. 23. 15  | 63. 45. 59  |
| 21    |                   | 70. 40. 47  | 72. 3. 58   | 73. 27. 13  | 74. 50. 33  |
| 22    |                   | 81. 48. 17  |             |             |             |
| 22    | $\alpha$ Arietis. | 38. 13. 29  | 39. 36. 7   | 40. 59. 7   | 42. 22. 28  |
| 23    |                   | 49. 24. 12  | 50. 49. 25  | 52. 14. 55  | 53. 40. 40  |
| 24    |                   | 60. 53. 16  |             |             |             |
| 24    | Aldebaran.        | 27. 0. 17   | 28. 30. 35  | 30. 1. 2    | 31. 31. 40  |
| 25    |                   | 39. 7. 15   | 40. 38. 51  | 42. 10. 38  | 43. 42. 35  |
| 26    |                   | 51. 25. 13  | 52. 58. 18  | 54. 31. 35  | 56. 5. 3    |
| 27    |                   | 63. 55. 21  | 65. 30. 0   | 67. 4. 50   | 68. 39. 53  |
| 28    | Pollux.           | 34. 31. 25  | 36. 1. 57   | 37. 33. 6   | 39. 4. 49   |
| 29    |                   | 46. 50. 18  | 48. 24. 37  | 49. 59. 16  | 51. 34. 15  |
| 30    | Regulus.          | 22. 42. 53  | 24. 21. 26  | 26. 0. 16   | 27. 39. 22  |
| 31    |                   | 35. 58. 17  | 37. 38. 44  | 39. 19. 23  | 41. 0. 14   |

[12]

JANUARY 1774.

# Configurations of the SATELLITES of JUPITER at 6 o' th' Clock in the Evening.

|    |     |    |    |       |    |    |    |    |     |
|----|-----|----|----|-------|----|----|----|----|-----|
| 1  | 4.  |    | .3 | .1    | ⊙  | .2 |    |    |     |
| 2  | 4   |    |    |       | ⊙  | 1. | 2. |    | 3.0 |
| 3  |     | .4 |    | 2.    | ⊙  | 1  |    | .3 |     |
| 4  |     |    | .4 | .2    | ⊙  |    |    | 3. |     |
| 5  |     |    |    | .4    | ⊙  |    | .1 | .2 |     |
| 6  | 4.0 |    |    | 1 0 3 | ⊙  | 2. |    |    |     |
| 7  |     |    | 3. | 2.    | ⊙  |    | 1. | .4 |     |
| 8  | 2.0 |    | .3 | .1    | ⊙  |    |    |    | .4  |
| 9  |     |    |    |       | .3 | ⊙  | 1. | 2. | .4  |
| 10 | 1.0 |    |    | 2.    | ⊙  |    | .3 |    | .4  |
| 11 |     |    | .2 |       | 1. | ⊙  |    | 3. | 4.  |
| 12 |     |    |    |       | ⊙  | .1 | .2 |    | 4.  |
| 13 | 3●  |    |    | 1.    | ⊙  | 2. |    | 4. |     |
| 14 |     |    | 3. | 2.    | ⊙  | 4. | 1. |    |     |
| 15 |     |    | .3 |       | .4 | .1 | .2 | ⊙  |     |
| 16 |     |    |    |       | .3 | ⊙  | 1. | 2. |     |
| 17 | 4.  |    |    | 2.    | .1 | ⊙  |    | .3 |     |
| 18 | 4.  |    |    | .2    | ⊙  |    |    | .3 | 1●  |
| 19 | 4   |    |    |       | ⊙  | .1 | .2 | 3. |     |
| 20 | 4   |    |    |       | 1. | ⊙  | 2. |    | 3●  |
| 21 |     |    | .4 | 3.    | 2. | ⊙  |    | .1 |     |
| 22 |     |    | .3 |       | .4 | 1  | .2 | ⊙  |     |
| 23 |     |    |    | .3    | ⊙  |    | .4 | 1. | .2  |
| 24 | 2●  |    |    |       | .1 | ⊙  | .3 |    | .4  |
| 25 |     |    |    | .2    | ⊙  | 1. |    | .3 | .4  |
| 26 | 1.0 |    |    |       | ⊙  |    | .2 | 3. | .4  |
| 27 |     |    |    |       | 1. | ⊙  | 2. |    | 4.  |
| 28 |     |    | 3. | 2.    | ⊙  |    | .1 |    | 4.  |
| 29 |     |    | .3 |       | 1. | .2 | ⊙  |    | 4.  |
| 30 |     |    |    | .3    | ⊙  |    | 1. | .2 | 4.  |
| 31 | 4●  |    |    |       | .1 | ⊙  | .2 | .3 |     |



# F E B R U A R Y 1774. [13]

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.                                                           | Phases of the Moon.                              |            |
|--------------------|-------------------|----------------------------------------------------------------------------------|--------------------------------------------------|------------|
|                    |                   |                                                                                  |                                                  | D. H. M.   |
|                    |                   |                                                                                  | Last Quarter —                                   | 3. 14. 56  |
|                    |                   |                                                                                  | New Moon —                                       | 10. 8. 39  |
|                    |                   |                                                                                  | First Quarter —                                  | 17. 23. 55 |
|                    |                   |                                                                                  | Full Moon —                                      | 25. 22. 30 |
| 1                  | Tu.               | <i>Purification of V. Mary.</i><br>Blas. On mor. of Purif.<br>[3 ret.<br>Agatha. | Other Phenomena.                                 |            |
| 2                  | W.                |                                                                                  | D.                                               |            |
| 3                  | Th.               |                                                                                  | 1. ☾ ☿ 10 <sup>h</sup> . 8'.                     |            |
| 4                  | F.                |                                                                                  | 2. ☾ ♀ 14 <sup>h</sup> . 35'.                    |            |
| 5                  | Sa.               |                                                                                  | 4. ☾ ♄ 2 <sup>h</sup> . 2'.                      |            |
|                    |                   |                                                                                  | ☾ ♃ 5 <sup>h</sup> . 49'.                        |            |
| 6                  | Su.               | <i>Sexagesima-Sunday.</i>                                                        | ☾ ☿ 10 <sup>h</sup> . 5'.                        |            |
| 7                  | M.                |                                                                                  | 8. ☾ ♀ 20 <sup>h</sup> . 39'.                    |            |
| 8                  | Tu.               |                                                                                  | 13. ☾ ♃ 20 <sup>h</sup> . 29'.                   |            |
| 9                  | W.                |                                                                                  | 18. ☉ enters ♋ at 0 <sup>h</sup> . 12'.          |            |
| 10                 | Th.               | In 8 days of Purif. 4 ret.                                                       | ☾ ♄ 5 <sup>h</sup> . 18'.                        |            |
| 11                 | F.                |                                                                                  | ☾ 1 ad ♄ 7 <sup>h</sup> . 27'.                   |            |
| 12                 | Sa.               | Hilary Term ends.                                                                | ☾ 2 ad ♄ 7 <sup>h</sup> . 58'.                   |            |
|                    |                   |                                                                                  | ☾ ♄ 13 <sup>h</sup> . 22'.                       |            |
| 13                 | Su.               | <i>Quinquagesima, or Shrove-</i>                                                 | 24. ☾ ♄ 10 <sup>h</sup> . 40'.                   |            |
| 14                 | M.                | <i>Valentine. [Sunday.</i>                                                       | ☾ ☉ Im. 15 <sup>h</sup> . 53'.                   | *          |
| 15                 | Tu.               |                                                                                  | 13 <sup>1</sup> / <sub>2</sub> ' S. of D's cent. |            |
| 16                 | W.                | <i>Ash-Wednesday.</i>                                                            | Em. 16 <sup>h</sup> . 22'.                       | *          |
| 17                 | Th.               |                                                                                  | 14' S.                                           |            |
| 18                 | F.                |                                                                                  | 26. ☾ ♄ 17 <sup>h</sup> . 12'.                   |            |
| 19                 | Sa.               |                                                                                  | 27. ☾ ♀ 3 <sup>h</sup> . 10'.                    |            |
|                    |                   |                                                                                  | ☾ ♃ 16 <sup>h</sup> . 50'.                       |            |
| 20                 | Su.               | <i>1st Sunday in Lent.</i>                                                       | 28. ☾ ☿ 16 <sup>h</sup> . 14'.                   |            |
| 21                 | M.                |                                                                                  |                                                  |            |
| 22                 | Tu.               |                                                                                  |                                                  |            |
| 23                 | W.                |                                                                                  |                                                  |            |
| 24                 | Th.               | <i>St. Matthias.</i>                                                             |                                                  |            |
| 25                 | F.                |                                                                                  |                                                  |            |
| 26                 | Sa.               |                                                                                  |                                                  |            |
| 27                 | Su.               | <i>2d Sunday in Lent.</i>                                                        |                                                  |            |
| 28                 | M.                |                                                                                  |                                                  |            |

[14] FEBRUARY 1774.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Add. | Diff. |
|--------------------|-------------------|------------------|---------------------------|----------------------|----------------------|-------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.                | S.    |
| 1                  | Tu.               | 10. 12. 48. 23   | 21. 1. 6, 5               | 16. 59. 11           | 14. 6, 2             | 7, 0  |
| 2                  | W.                | 10. 13. 49. 11   | 21. 5. 10, 1              | 16. 41. 50           | 14. 13, 2            | 6, 2  |
| 3                  | Th.               | 10. 14. 49. 59   | 21. 9. 12, 9              | 16. 24. 11           | 14. 19, 4            | 5, 4  |
| 4                  | F.                | 10. 15. 50. 46   | 21. 13. 14, 8             | 16. 6. 15            | 14. 24, 8            | 4, 6  |
| 5                  | Sa.               | 10. 16. 51. 32   | 21. 17. 16, 0             | 15. 48. 2            | 14. 29, 4            | 3, 8  |
| 6                  | Su.               | 10. 17. 52. 17   | 21. 21. 16, 4             | 15. 29. 33           | 14. 33, 2            | 3, 1  |
| 7                  | M.                | 10. 18. 53. 1    | 21. 25. 16, 0             | 15. 10. 49           | 14. 36, 3            | 2, 2  |
| 8                  | Tu.               | 10. 19. 53. 44   | 21. 29. 14, 9             | 14. 51. 49           | 14. 38, 5            | 1, 5  |
| 9                  | W.                | 10. 20. 54. 26   | 21. 33. 12, 9             | 14. 32. 34           | 14. 40, 0            | 0, 7  |
| 10                 | Th.               | 10. 21. 55. 6    | 21. 37. 10, 1             | 14. 13. 4            | 14. 40, 7            | 0, 1  |
| 11                 | F.                | 10. 22. 55. 45   | 21. 41. 6, 6              | 13. 53. 20           | 14. 40, 6            | 0, 8  |
| 12                 | Sa.               | 10. 23. 56. 22   | 21. 45. 2, 3              | 13. 33. 22           | 14. 39, 8            | 1, 6  |
| 13                 | Su.               | 10. 24. 56. 58   | 21. 48. 57, 2             | 13. 13. 12           | 14. 38, 2            | 2, 4  |
| 14                 | M.                | 10. 25. 57. 31   | 21. 52. 51, 3             | 12. 52. 49           | 14. 35, 8            | 3, 2  |
| 15                 | Tu.               | 10. 26. 58. 3    | 21. 56. 44, 7             | 12. 32. 13           | 14. 32, 6            | 3, 9  |
| 16                 | W.                | 10. 27. 58. 33   | 22. 0. 37, 4              | 12. 11. 25           | 14. 28, 7            | 4, 6  |
| 17                 | Th.               | 10. 28. 59. 2    | 22. 4. 29, 4              | 11. 50. 26           | 14. 24, 1            | 5, 3  |
| 18                 | F.                | 10. 29. 59. 28   | 22. 8. 20, 6              | 11. 29. 16           | 14. 18, 8            | 6, 0  |
| 19                 | Sa.               | 11. 0. 59. 52    | 22. 12. 11, 1             | 11. 7. 55            | 14. 12, 8            | 6, 8  |
| 20                 | Su.               | 11. 2. 0. 14     | 22. 16. 0, 9              | 10. 46. 24           | 14. 6, 0             | 7, 4  |
| 21                 | M.                | 11. 3. 0. 35     | 22. 19. 50, 0             | 10. 24. 42           | 13. 58, 6            | 8, 0  |
| 22                 | Tu.               | 11. 4. 0. 53     | 22. 23. 38, 5             | 10. 2. 52            | 13. 50, 6            | 8, 7  |
| 23                 | W.                | 11. 5. 1. 9      | 22. 27. 26, 3             | 9. 40. 53            | 13. 41, 9            | 9, 4  |
| 24                 | Th.               | 11. 6. 1. 23     | 22. 31. 13, 5             | 9. 18. 45            | 13. 32, 5            | 10, 0 |
| 25                 | F.                | 11. 7. 1. 35     | 22. 35. 0, 1              | 8. 56. 29            | 13. 22, 5            | 10, 5 |
| 26                 | Sa.               | 11. 8. 1. 45     | 22. 38. 46, 1             | 8. 34. 5             | 13. 12, 0            | 11, 0 |
| 27                 | Su.               | 11. 9. 1. 54     | 22. 42. 31, 5             | 8. 11. 33            | 13. 1, 0             | 11, 6 |
| 28                 | M.                | 11. 10. 2. 1     | 22. 46. 16, 4             | 7. 48. 54            | 12. 49, 4            | 12, 1 |

# F E B R U A R Y 1774.

[15]

| Days. | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|-------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|       | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1     | 16. 16, 5                        | 1. 8, 1                                            | 2. 32, 1                           | 9. 993848                              | 5. 24. 25                       |
| 7     | 16. 15, 5                        | 1. 7, 4                                            | 2. 31, 8                           | 9. 994329                              | 5. 24. 6                        |
| 13    | 16. 14, 3                        | 1. 6, 7                                            | 2. 31, 4                           | 9. 994850                              | 5. 23. 47                       |
| 19    | 16. 13, 0                        | 1. 6, 1                                            | 2. 31, 0                           | 9. 995406                              | 5. 23. 28                       |
| 25    | 16. 11, 6                        | 1. 5, 6                                            | 2. 30, 5                           | 9. 996015                              | 5. 23. 9                        |

## Eclipses of the SATELLITES of J U P I T E R.

| I. Satellite.<br>Emerfions. |            | II. Satellite.<br>Emerfions. |            | III. Satellite.      |              |
|-----------------------------|------------|------------------------------|------------|----------------------|--------------|
| Days                        | H. M. S.   | Days                         | H. M. S.   | Days                 | H. M. S.     |
| 1                           | 11. 36. 57 | 4                            | 0. 40. 33  | 3                    | 16. 19. 44 I |
| 3                           | 6* 5. 44   | 7                            | 13. 58. 11 | 3                    | 18. 27. 46 E |
| 5                           | 0. 34. 33  | 11                           | 3. 15. 57  | 10                   | 20. 22. 34 I |
| 6                           | 19. 3. 26  | 14                           | 16. 33. 51 | 10                   | 22. 29. 8 E  |
| 8                           | 13. 32. 19 | 18                           | 5* 51. 55  | 18                   | 0. 25. 54 I  |
| 10                          | 8* 1. 16   | 21                           | 19. 10. 5  | 18                   | 2. 31. 8 E   |
| 12                          | 2. 30. 13  | 25                           | 8. 28. 24  | 25                   | 4. 29. 43 I  |
| 13                          | 20. 59. 14 | 28                           | 21. 46. 48 | 25                   | 6* 33. 38 E  |
| 15                          | 15. 28. 15 |                              |            | IV. Satellite. Conj. |              |
| 17                          | 9. 57. 22  |                              |            | 9                    | 2. 43 Inf.   |
| 19                          | 4. 26. 27  |                              |            | 17                   | 11. 52 Sup.  |
| 20                          | 22. 55. 36 |                              |            | 25                   | 21. 2 Inf.   |
| 22                          | 17. 24. 45 |                              |            |                      |              |
| 24                          | 11. 53. 58 |                              |            |                      |              |
| 26                          | 6* 23. 10  |                              |            |                      |              |
| 28                          | 0. 52. 23  |                              |            |                      |              |



[16] FEBRUARY 1774.

| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric La-<br>titude. | Decli-<br>nation. | Pass.<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|-------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                   |

MERCURY. Sup.  $\delta$  26<sup>d</sup> 9<sup>h</sup>.

|    |            |         |            |         |          |        |
|----|------------|---------|------------|---------|----------|--------|
| 1  | 8. 16. 23  | 3. 34 S | 9. 25. 28  | 1. 17 S | 22. 20 S | 22. 52 |
| 7  | 9. 3. 5    | 5. 9    | 10. 4. 46  | 1. 45   | 20. 48   | 23. 8  |
| 13 | 9. 20. 43  | 6. 20   | 10. 14. 33 | 2. 2    | 18. 26   | 23. 25 |
| 19 | 10. 10. 11 | 6. 56   | 10. 24. 52 | 2. 5    | 15. 13   | 23. 42 |
| 25 | 11. 2. 34  | 6. 42   | 11. 5. 46  | 1. 53   | 11. 9    | 0. 1   |

VENUS.

|    |           |         |            |        |        |       |
|----|-----------|---------|------------|--------|--------|-------|
| 1  | 3. 11. 50 | 1. 33 N | 11. 27. 49 | 2. 8 N | 1. 6 N | 2. 48 |
| 7  | 3. 21. 34 | 2. 3    | 0. 2. 14   | 3. 3   | 3. 42  | 2. 38 |
| 13 | 4. 1. 19  | 2. 28   | 0. 5. 59   | 4. 2   | 6. 5   | 2. 26 |
| 19 | 4. 11. 4  | 2. 49   | 0. 8. 49   | 5. 3   | 8. 9   | 2. 13 |
| 25 | 4. 20. 49 | 3. 6    | 0. 10. 36  | 6. 7   | 9. 50  | 1. 54 |

MARS.

|    |            |         |            |        |          |        |
|----|------------|---------|------------|--------|----------|--------|
| 1  | 10. 8. 49  | 1. 50 S | 10. 10. 28 | 1. 4 S | 18. 41 S | 23. 52 |
| 7  | 10. 12. 34 | 1. 50   | 10. 15. 13 | 1. 5   | 17. 21   | 23. 47 |
| 13 | 10. 16. 21 | 1. 51   | 10. 19. 56 | 1. 5   | 15. 53   | 23. 42 |
| 19 | 10. 20. 9  | 1. 51   | 10. 24. 40 | 1. 5   | 14. 20   | 23. 37 |
| 25 | 10. 23. 57 | 1. 50   | 10. 29. 23 | 1. 5   | 12. 43   | 23. 32 |

JUPITER.

|    |           |         |           |         |         |       |
|----|-----------|---------|-----------|---------|---------|-------|
| 1  | 0. 15. 50 | 1. 19 S | 0. 6. 42  | 1. 11 S | 1. 54 N | 3. 25 |
| 7  | 0. 16. 31 | 1. 18   | 0. 7. 52  | 1. 10   | 2. 3    | 3. 5  |
| 13 | 0. 17. 4  | 1. 18   | 0. 9. 4   | 1. 9    | 2. 33   | 2. 46 |
| 19 | 0. 17. 37 | 1. 18   | 0. 10. 20 | 1. 8    | 3. 3    | 2. 28 |
| 25 | 0. 18. 10 | 1. 18   | 0. 11. 38 | 1. 7    | 3. 35   | 2. 9  |

SATURN.

|    |           |         |           |         |         |        |
|----|-----------|---------|-----------|---------|---------|--------|
| 1  | 5. 21. 27 | 2. 10 N | 5. 25. 31 | 2. 21 N | 3. 56 N | 14. 44 |
| 7  | 5. 21. 39 | 2. 10   | 5. 25. 12 | 2. 22   | 4. 5    | 14. 19 |
| 13 | 5. 21. 51 | 2. 11   | 5. 24. 51 | 2. 24   | 4. 15   | 13. 54 |
| 19 | 5. 22. 3  | 2. 11   | 5. 24. 27 | 2. 25   | 4. 25   | 13. 29 |
| 25 | 5. 22. 16 | 2. 11   | 5. 24. 2  | 2. 26   | 4. 36   | 13. 5  |

# F E B R U A R Y 1774.

[17]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midnight. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|------------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D. M. S.                     |
| 1                  | Tu.               | 6. 9. 22. 44              | 6. 16. 8. 27                  | 1. 29. 5 N               | 2. 3. 38 N                   |
| 2                  | W.                | 6. 22. 57. 34             | 6. 29. 49. 51                 | 2. 36. 42                | 3. 7. 49                     |
| 3                  | Th.               | 7. 6. 45. 28              | 7. 13. 44. 26                 | 3. 36. 24                | 4. 2. 2                      |
| 4                  | F.                | 7. 20. 46. 35             | 7. 27. 51. 54                 | 4. 24. 14                | 4. 42. 32                    |
| 5                  | Sa.               | 8. 5. 0. 7                | 8. 12. 10. 57                 | 4. 56. 37                | 5. 6. 8                      |
| 6                  | Su.               | 8. 19. 23. 58             | 8. 26. 38. 44                 | 5. 10. 51                | 5. 10. 38                    |
| 7                  | M.                | 9. 3. 54. 37              | 9. 11. 10. 56                 | 5. 5. 27                 | 4. 55. 21                    |
| 8                  | Tu.               | 9. 18. 26. 57             | 9. 25. 41. 54                 | 4. 40. 29                | 4. 21. 7                     |
| 9                  | W.                | 10. 2. 54. 53             | 10. 10. 5. 10                 | 3. 57. 40                | 3. 30. 34                    |
| 10                 | Th.               | 10. 17. 12. 4             | 10. 24. 14. 51                | 3. 0. 24                 | 2. 27. 42                    |
| 11                 | F.                | 11. 1. 12. 55             | 11. 8. 5. 55                  | 1. 53. 7                 | 1. 17. 14                    |
| 12                 | Sa.               | 11. 14. 53. 29            | 11. 21. 35. 25                | 0. 40. 46 N              | 0. 4. 5 N                    |
| 13                 | Su.               | 11. 28. 11. 40            | 0. 4. 42. 21                  | 0. 32. 7 S               | 1. 7. 25 S                   |
| 14                 | M.                | 0. 11. 7. 36              | 0. 17. 27. 34                 | 1. 41. 22                | 2. 13. 38                    |
| 15                 | Tu.               | 0. 23. 42. 51             | 0. 29. 53. 46                 | 2. 43. 55                | 3. 11. 53                    |
| 16                 | W.                | 1. 6. 0. 50               | 1. 12. 4. 31                  | 3. 37. 23                | 4. 0. 12                     |
| 17                 | Th.               | 1. 18. 5. 26              | 1. 24. 4. 16                  | 4. 20. 12                | 4. 37. 14                    |
| 18                 | F.                | 2. 0. 1. 27               | 2. 5. 57. 46                  | 4. 51. 12                | 5. 1. 59                     |
| 19                 | Sa.               | 2. 11. 53. 44             | 2. 17. 49. 53                 | 5. 9. 34                 | 5. 13. 50                    |
| 20                 | Su.               | 2. 23. 46. 55             | 2. 29. 45. 23                 | 5. 14. 44                | 5. 12. 15                    |
| 21                 | M.                | 3. 5. 45. 40              | 3. 11. 48. 22                 | 5. 6. 21                 | 4. 57. 1                     |
| 22                 | Tu.               | 3. 17. 53. 47             | 3. 24. 2. 18                  | 4. 44. 15                | 4. 28. 8                     |
| 23                 | W.                | 4. 0. 14. 20              | 4. 6. 30. 0                   | 4. 8. 42                 | 3. 46. 8                     |
| 24                 | Th.               | 4. 12. 49. 32             | 4. 19. 13. 43                 | 3. 20. 32                | 2. 52. 10                    |
| 25                 | F.                | 4. 25. 40. 35             | 5. 2. 12. 9                   | 2. 21. 15                | 1. 48. 13                    |
| 26                 | Sa.               | 5. 8. 47. 34              | 5. 15. 26. 54                 | 1. 13. 21                | 0. 37. 7 S                   |
| 27                 | Su.               | 5. 22. 9. 49              | 5. 28. 56. 15                 | 0. 0. 4 S                | 0. 37. 21 N                  |
| 28                 | M.                | 6. 5. 45. 49              | 6. 12. 38. 23                 | 1. 14. 32 N              | 1. 50. 56                    |

[18] FEBRUARY 1774.

| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Asc. at Midn. | D's Declination at Noon. | D's Declination at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|-------------------------|--------------------------|--------------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                   | D. M.                    | D. M.                    |
| 1                  | Tu.               | 22       | 16. 8                   | 189. 12                   | 195. 40                 | 2. 21 S                  | 4. 28 S                  |
| 2                  | W.                | 23       | 16. 59                  | 202. 13                   | 208. 52                 | 6. 31                    | 8. 30                    |
| 3                  | Th.               | 24       | 17. 52                  | 215. 37                   | 222. 31                 | 10. 23                   | 12. 7                    |
| 4                  | F.                | 25       | 18. 47                  | 229. 32                   | 236. 42                 | 13. 43                   | 15. 7                    |
| 5                  | Sa.               | 26       | 19. 44                  | 244. 0                    | 251. 24                 | 16. 18                   | 17. 13                   |
| 6                  | Su.               | 27       | 20. 43                  | 258. 54                   | 266. 29                 | 17. 53                   | 18. 15                   |
| 7                  | M.                | 28       | 21. 42                  | 274. 6                    | 281. 44                 | 18. 19                   | 18. 6                    |
| 8                  | Tu.               | 29       | 22. 40                  | 289. 20                   | 296. 51                 | 17. 34                   | 16. 45                   |
| 9                  | W.                | 30       | 23. 36                  | 304. 16                   | 311. 33                 | 15. 40                   | 14. 22                   |
| 10                 | Th.               | 1        | ♂                       | 318. 43                   | 325. 44                 | 12. 50                   | 11. 8                    |
| 11                 | F.                | 2        | 0. 30                   | 332. 34                   | 339. 16                 | 9. 17                    | 7. 21                    |
| 12                 | Sa.               | 3        | 1. 20                   | 345. 49                   | 352. 15                 | 5. 20                    | 3. 17 S                  |
| 13                 | Su.               | 4        | 2. 9                    | 358. 33                   | 4. 46                   | 1. 13 S                  | 0. 50 N                  |
| 14                 | M.                | 5        | 2. 56                   | 10. 54                    | 16. 57                  | 2. 51 N                  | 4. 48                    |
| 15                 | Tu.               | 6        | 3. 42                   | 22. 58                    | 28. 57                  | 6. 40                    | 8. 27                    |
| 16                 | W.                | 7        | 4. 27                   | 34. 55                    | 40. 53                  | 10. 7                    | 11. 40                   |
| 17                 | Th.               | 8        | 5. 12                   | 46. 52                    | 52. 52                  | 13. 4                    | 14. 20                   |
| 18                 | F.                | 9        | 5. 58                   | 58. 54                    | 64. 59                  | 15. 26                   | 16. 22                   |
| 19                 | Sa.               | 10       | 6. 45                   | 71. 6                     | 77. 16                  | 17. 7                    | 17. 42                   |
| 20                 | Su.               | 11       | 7. 32                   | 83. 28                    | 89. 44                  | 18. 5                    | 18. 16                   |
| 21                 | M.                | 12       | 8. 20                   | 96. 2                     | 102. 22                 | 18. 14                   | 18. 1                    |
| 22                 | Tu.               | 13       | 9. 9                    | 108. 44                   | 115. 7                  | 17. 34                   | 16. 56                   |
| 23                 | W.                | 14       | 9. 58                   | 121. 31                   | 127. 55                 | 16. 4                    | 15. 1                    |
| 24                 | Th.               | 15       | 10. 47                  | 134. 19                   | 140. 43                 | 13. 47                   | 12. 21                   |
| 25                 | F.                | 16       | 11. 36                  | 147. 7                    | 153. 32                 | 10. 46                   | 9. 1                     |
| 26                 | Sa.               | 17       | 12. 25                  | 159. 57                   | 166. 22                 | 7. 9                     | 5. 10                    |
| 27                 | Su.               | 18       | 13. 15                  | 172. 49                   | 179. 17                 | 3. 7 N                   | 1. 0 N                   |
| 28                 | M.                | 19       | 14. 6                   | 185. 48                   | 192. 22                 | 1. 9 S                   | 3. 18 S                  |



# FEBRUARY 1774.

[19]

| Days of the Month. | Days of the Week. | Semidr. D at Noon. | Semidr. D at Mid-night. | Hor. Par. D at Noon. | Hor. Par. D at Midnight. | Proport. Lo- gar. at Noon. | Proport. Lo- gar. at Midn. |
|--------------------|-------------------|--------------------|-------------------------|----------------------|--------------------------|----------------------------|----------------------------|
|                    |                   | M. S.              | M. S.                   | M. S.                | M. S.                    |                            |                            |
| 1                  | Tu.               | 15. 49             | 15. 53                  | 58. 3                | 58. 17                   | 4915                       | 4897                       |
| 2                  | W.                | 15. 57             | 16. 0                   | 58. 31               | 58. 44                   | 4880                       | 4864                       |
| 3                  | Th.               | 16. 4              | 16. 7                   | 58. 57               | 59. 9                    | 4848                       | 4823                       |
| 4                  | F.                | 16. 10             | 16. 13                  | 59. 21               | 59. 31                   | 4819                       | 4806                       |
| 5                  | Sa.               | 16. 16             | 16. 18                  | 59. 40               | 59. 48                   | 4795                       | 4786                       |
| 6                  | Su.               | 16. 19             | 16. 20                  | 59. 54               | 59. 58                   | 4778                       | 4773                       |
| 7                  | M.                | 16. 21             | 16. 21                  | 60. 0                | 59. 59                   | 4771                       | 4772                       |
| 8                  | Tu.               | 16. 20             | 16. 18                  | 59. 55               | 59. 49                   | 4777                       | 4784                       |
| 9                  | W.                | 16. 16             | 16. 12                  | 59. 40               | 59. 28                   | 4795                       | 4810                       |
| 10                 | Th.               | 16. 8              | 16. 3                   | 59. 13               | 58. 56                   | 4828                       | 4849                       |
| 11                 | F.                | 15. 58             | 15. 53                  | 58. 37               | 58. 16                   | 4872                       | 4898                       |
| 12                 | Sa.               | 15. 47             | 15. 41                  | 57. 54               | 57. 32                   | 4926                       | 4953                       |
| 13                 | Su.               | 15. 34             | 15. 28                  | 57. 9                | 56. 46                   | 4983                       | 5012                       |
| 14                 | M.                | 15. 22             | 15. 16                  | 56. 24               | 56. 3                    | 5040                       | 5067                       |
| 15                 | Tu.               | 15. 11             | 15. 6                   | 55. 43               | 55. 25                   | 5093                       | 5116                       |
| 16                 | W.                | 15. 2              | 14. 58                  | 55. 9                | 54. 55                   | 5137                       | 5155                       |
| 17                 | Th.               | 14. 55             | 14. 52                  | 54. 44               | 54. 35                   | 5170                       | 5182                       |
| 18                 | F.                | 14. 51             | 14. 50                  | 54. 29               | 54. 25                   | 5190                       | 5199                       |
| 19                 | Sa.               | 14. 49             | 14. 50                  | 54. 24               | 54. 25                   | 5197                       | 5195                       |
| 20                 | Su.               | 14. 51             | 14. 53                  | 54. 30               | 54. 36                   | 5189                       | 5181                       |
| 21                 | M.                | 14. 55             | 14. 58                  | 54. 44               | 54. 55                   | 5170                       | 5155                       |
| 22                 | Tu.               | 15. 1              | 15. 5                   | 55. 7                | 55. 21                   | 5140                       | 5122                       |
| 23                 | W.                | 15. 9              | 15. 14                  | 55. 37               | 55. 53                   | 5100                       | 5080                       |
| 24                 | Th.               | 15. 19             | 15. 24                  | 56. 11               | 56. 29                   | 5056                       | 5033                       |
| 25                 | F.                | 15. 29             | 15. 34                  | 56. 48               | 57. 6                    | 5009                       | 4986                       |
| 26                 | Sa.               | 15. 38             | 15. 43                  | 57. 24               | 57. 41                   | 4964                       | 4942                       |
| 27                 | Su.               | 15. 47             | 15. 52                  | 57. 57               | 58. 12                   | 4922                       | 4903                       |
| 28                 | M.                | 15. 56             | 15. 59                  | 58. 26               | 58. 38                   | 4886                       | 4871                       |

[20]

## FEBRUARY 1774.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.      | Noon.       | 3 Hours.   | 6 Hours.    | 9 Hours.    |
|-------|-------------------|-------------|------------|-------------|-------------|
|       |                   | D. M. S.    | D. M. S.   | D. M. S.    | D. M. S.    |
| 1     | Antares.          | 57. 29. 45  | 55. 50. 16 | 54. 10. 43  | 52. 31. 4   |
| 2     |                   | 44. 11. 42  | 42. 31. 45 | 40. 51. 50  | 39. 12. 0   |
| 3     |                   | 30. 54. 56  | 29. 16. 6  | 27. 38. 0   | 26. 0. 38   |
| 4     |                   | 18. 10. 4   |            |             |             |
| 1     | The Sun.          |             |            | 120. 17. 28 | 118. 43. 26 |
| 2     |                   | 110. 50. 15 | 109. 15. 4 | 107. 39. 42 | 106. 4. 8   |
| 3     |                   | 98. 3. 33   | 96. 26. 52 | 94. 49. 59  | 93. 12. 55  |
| 4     |                   | 85. 5. 4    | 83. 26. 57 | 81. 48. 39  | 80. 10. 11  |
| 5     |                   | 71. 55. 36  | 70. 16. 13 | 68. 36. 42  | 66. 57. 3   |
| 6     |                   | 58. 36. 56  | 56. 56. 35 | 55. 16. 8   | 53. 35. 36  |
| 7     |                   | 45. 11. 57  | 43. 31. 6  | 41. 50. 14  | 40. 9. 22   |
| 12    | $\alpha$ Arietis. | 50. 11. 32  | 48. 34. 58 | 46. 59. 0   | 45. 23. 39  |
| 13    |                   | 37. 37. 19  | 36. 6. 29  | 34. 36. 35  | 33. 7. 38   |
| 14    | Aldebaran.        | 55. 30. 31  | 53. 54. 45 | 52. 19. 19  | 50. 44. 12  |
| 15    |                   | 42. 53. 17  | 41. 20. 0  | 39. 47. 1   | 38. 14. 18  |
| 16    |                   | 30. 34. 35  | 29. 3. 22  | 27. 32. 23  | 26. 1. 37   |
| 17    |                   | 18. 30. 36  |            |             |             |
| 17    | Pollux.           | 62. 52. 35  | 61. 25. 4  | 59. 57. 45  | 58. 30. 39  |
| 18    |                   | 51. 18. 8   | 49. 52. 10 | 48. 26. 23  | 47. 0. 48   |
| 19    |                   | 39. 55. 56  |            |             |             |
| 19    | Regulus.          | 74. 54. 26  | 73. 25. 56 | 71. 57. 23  | 70. 28. 48  |
| 20    |                   | 63. 5. 7    | 61. 36. 9  | 60. 7. 6    | 58. 37. 55  |
| 21    |                   | 51. 10. 24  | 49. 40. 28 | 48. 10. 23  | 46. 40. 8   |
| 22    |                   | 39. 6. 18   | 37. 34. 59 | 36. 3. 28   | 34. 31. 45  |
| 23    |                   | 26. 50. 2   | 25. 17. 7  | 23. 44. 1   | 22. 10. 43  |
| 24    | Spica $\mu$       | 67. 47. 45  | 66. 12. 30 | 64. 37. 0   | 63. 1. 14   |
| 25    |                   | 54. 58. 33  | 53. 21. 14 | 51. 43. 41  | 50. 5. 53   |
| 26    |                   | 41. 53. 32  | 40. 14. 23 | 38. 35. 3   | 36. 55. 32  |
| 27    |                   | 28. 35. 53  |            |             |             |
| 27    | Antares.          | 74. 29. 50  | 72. 49. 39 | 71. 9. 18   | 69. 28. 47  |
| 28    |                   | 61. 4. 2    | 59. 22. 42 | 57. 41. 17  | 55. 59. 47  |
| M. 1  |                   | 47. 31. 39  |            |             |             |

# F E B R U A R Y 1774. [21]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days.                           | Stars Names.      | 12 Hours.                                                                                       | 15 Hours.                                                                          | 18 Hours.                                                                        | 21 Hours.                                                                        |
|---------------------------------|-------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|                                 |                   | D. M. S.                                                                                        | D. M. S.                                                                           | D. M. S.                                                                         | D. M. S.                                                                         |
| 1<br>2<br>3                     | Antares.          | 50. 51. 21<br>37. 32. 16<br>24. 24. 0                                                           | 49. 11. 30<br>35. 52. 32<br>22. 48. 31                                             | 47. 31. 35<br>34. 13. 4<br>21. 14. 15                                            | 45. 51. 39<br>32. 33. 50<br>19. 41. 23                                           |
| 1<br>2<br>3<br>4<br>5<br>6<br>7 | The Sun.          | 117. 9. 12<br>104. 28. 24<br>91. 35. 41<br>78. 31. 34<br>65. 17. 16<br>51. 54. 59<br>38. 28. 30 | 115. 34. 45<br>102. 52. 28<br>89. 58. 18<br>76. 52. 48<br>63. 37. 21<br>50. 14. 18 | 114. 0. 6<br>101. 16. 21<br>88. 20. 44<br>75. 13. 53<br>61. 57. 20<br>48. 33. 34 | 112. 25. 16<br>99. 40. 2<br>86. 42. 59<br>73. 34. 49<br>60. 17. 11<br>46. 52. 47 |
| 11<br>12<br>13                  | $\alpha$ Arietis. | 56. 43. 8<br>43. 48. 57<br>31. 39. 41                                                           | 55. 4. 30<br>42. 14. 54                                                            | 53. 26. 20<br>40. 41. 34                                                         | 51. 48. 46<br>39. 9. 2                                                           |
| 13<br>14<br>15<br>16            | Aldebaran.        | 61. 57. 7<br>49. 9. 25<br>36. 41. 51<br>24. 31. 2                                               | 60. 19. 56<br>47. 34. 56<br>35. 9. 40<br>23. 0. 39                                 | 58. 43. 6<br>46. 0. 45<br>33. 37. 43<br>21. 30. 28                               | 57. 6. 38<br>44. 26. 52<br>32. 6. 2<br>20. 0. 27                                 |
| 17<br>18                        | Pollux.           | 57. 3. 45<br>45. 35. 24                                                                         | 55. 37. 4<br>44. 10. 13                                                            | 54. 10. 35<br>42. 45. 14                                                         | 52. 44. 16<br>41. 20. 29                                                         |
| 19<br>20<br>21<br>22<br>23      | Regulus.          | 69. 0. 10<br>57. 8. 40<br>45. 9. 44<br>32. 59. 50<br>20. 37. 14                                 | 67. 31. 29<br>55. 39. 18<br>43. 39. 9<br>31. 27. 41                                | 66. 2. 46<br>54. 9. 48<br>42. 8. 23<br>29. 55. 20                                | 64. 33. 59<br>52. 40. 10<br>40. 37. 26<br>28. 22. 47                             |
| 23<br>24<br>25<br>26            | Spica $\mu$       | 74. 6. 5<br>61. 25. 13<br>48. 27. 51<br>35. 15. 52                                              | 72. 31. 54<br>59. 48. 56<br>46. 49. 34<br>33. 36. 4                                | 70. 57. 27<br>58. 12. 24<br>45. 11. 6<br>31. 56. 8                               | 69. 22. 44<br>56. 35. 36<br>43. 32. 25<br>30. 16. 4                              |
| 27<br>28                        | Antares.          | 67. 48. 6<br>54. 18. 13                                                                         | 66. 7. 16<br>52. 36. 36                                                            | 64. 26. 19<br>50. 54. 58                                                         | 62. 45. 14<br>49. 13. 19                                                         |



[22] FEBRUARY 1774.

Distances of Moon's Center from ☉, and from Stars west of her.

| Days. | Stars<br>Names. | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|-----------------|-------------|-------------|-------------|-------------|
|       |                 | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | Regulus.        | 42. 41. 17  | 44. 22. 31  | 46. 3. 56   | 47. 45. 34  |
| 2     |                 | 56. 16. 46  | 57. 59. 34  | 59. 42. 33  | 61. 25. 43  |
| 3     |                 | 70. 4. 23   |             |             |             |
| 3     | Spica 𐌸         | 17. 1. 10   | 18. 42. 22  | 20. 24. 7   | 22. 6. 25   |
| 4     |                 | 30. 44. 35  | 32. 29. 15  | 34. 14. 12  | 35. 59. 25  |
| 5     |                 | 44. 48. 47  | 46. 35. 16  | 48. 21. 55  | 50. 8. 45   |
| 6     |                 | 59. 5. 6    | 60. 52. 46  | 62. 40. 33  | 64. 28. 26  |
| 7     | Antares.        | 28. 55. 10  | 30. 37. 33  | 32. 20. 35  | 34. 4. 16   |
| 8     |                 | 42. 47. 55  | 44. 33. 21  | 46. 18. 54  | 48. 4. 35   |
| 9     |                 | 56. 53. 30  |             |             |             |
| 14    | The Sun.        | 45. 11. 33  | 46. 39. 37  | 48. 7. 21   | 49. 34. 46  |
| 15    |                 | 56. 47. 22  | 58. 13. 0   | 59. 38. 21  | 61. 3. 26   |
| 16    |                 | 68. 5. 4    | 69. 28. 40  | 70. 52. 3   | 72. 15. 13  |
| 17    |                 | 79. 8. 18   | 80. 30. 27  | 81. 52. 27  | 83. 14. 20  |
| 18    |                 | 90. 1. 59   | 91. 23. 16  | 92. 44. 30  | 94. 5. 41   |
| 19    |                 | 100. 51. 11 | 102. 12. 15 | 103. 33. 21 | 104. 54. 29 |
| 20    |                 | 111. 40. 55 | 113. 2. 27  | 114. 24. 5  | 115. 45. 50 |
| 18    | ♈ Arietis.      | 29. 25. 27  | 30. 44. 14  | 32. 3. 42   | 33. 23. 47  |
| 19    |                 | 40. 12. 1   | 41. 34. 52  | 42. 58. 2   | 44. 21. 32  |
| 20    |                 | 51. 23. 20  |             |             |             |
| 20    | Aldebaran.      | 17. 4. 27   | 18. 33. 32  | 20. 2. 44   | 21. 31. 59  |
| 21    |                 | 29. 0. 10   | 30. 30. 15  | 32. 0. 31   | 33. 30. 57  |
| 22    |                 | 41. 5. 52   | 42. 37. 27  | 44. 9. 15   | 45. 41. 17  |
| 23    |                 | 53. 25. 2   | 54. 58. 30  | 56. 32. 13  | 58. 6. 12   |
| 24    |                 | 66. 0. 5    |             |             |             |
| 24    | Pollux.         | 24. 47. 25  | 26. 12. 40  | 27. 39. 5   | 29. 6. 35   |
| 25    |                 | 36. 38. 2   | 38. 10. 33  | 39. 43. 41  | 41. 17. 26  |
| 26    |                 | 49. 13. 27  | 50. 50. 0   | 52. 26. 56  | 54. 4. 14   |
| 27    | Regulus.        | 25. 28. 13  | 27. 9. 21   | 28. 50. 46  | 30. 32. 27  |
| 28    |                 | 39. 4. 11   | 40. 47. 9   | 42. 30. 19  | 44. 13. 40  |
| M. 1  |                 | 52. 52. 47  |             |             |             |

# F E B R U A R Y 1774. [23]

Distances of  $\gamma$ 's center from  $\odot$ , and from stars west of her.

| Days.                                        | Stars<br>Names.   | 12 Hours.                                                                                                   | 15 Hours.                                                                                                     | 18 Hours.                                                                                                  | 21 Hours.                                                                                                   |
|----------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|                                              |                   | D. M. S.                                                                                                    | D. M. S.                                                                                                      | D. M. S.                                                                                                   | D. M. S.                                                                                                    |
| 1<br>2                                       | Regulus.          | 49. 27. 23<br>63. 9. 4                                                                                      | 51. 9. 26<br>64. 52. 37                                                                                       | 52. 51. 41<br>66. 36. 21                                                                                   | 54. 34. 8<br>68. 20. 17                                                                                     |
| 3<br>4<br>5<br>6                             | Spica $\mu$       | 23. 49. 12<br>37. 44. 53<br>51. 55. 44<br>66. 16. 26                                                        | 25. 32. 27<br>39. 30. 32<br>53. 42. 52                                                                        | 27. 16. 6<br>41. 16. 25<br>55. 30. 9                                                                       | 29. 0. 10<br>43. 2. 30<br>57. 17. 33                                                                        |
| 6<br>7<br>8                                  | Antares.          | 22. 14. 47<br>35. 48. 24<br>49. 50. 21                                                                      | 23. 53. 19<br>37. 32. 51<br>51. 36. 9                                                                         | 25. 32. 58<br>39. 17. 35<br>53. 21. 58                                                                     | 27. 13. 37<br>41. 2. 38<br>55. 7. 46                                                                        |
| 13<br>14<br>15<br>16<br>17<br>18<br>19<br>20 | The Sun.          | 39. 15. 56<br>51. 1. 53<br>62. 28. 15<br>73. 38. 11<br>84. 36. 5<br>95. 26. 50<br>106. 15. 39<br>117. 7. 40 | 40. 45. 21<br>52. 28. 42<br>63. 52. 49<br>75. 0. 58<br>85. 57. 42<br>96. 47. 57<br>107. 36. 53<br>118. 29. 37 | 42. 14. 25<br>53. 55. 12<br>65. 17. 9<br>76. 23. 35<br>87. 19. 13<br>98. 9. 2<br>108. 58. 8<br>119. 51. 42 | 43. 43. 9<br>55. 21. 25<br>66. 41. 14<br>77. 46. 1<br>88. 40. 39<br>99. 30. 6<br>110. 19. 30<br>121. 13. 56 |
| 18<br>19                                     | $\alpha$ Arietis. | 34. 44. 27<br>45. 45. 21                                                                                    | 36. 5. 39<br>47. 9. 28                                                                                        | 37. 27. 20<br>48. 33. 51                                                                                   | 38. 49. 29<br>49. 58. 26                                                                                    |
| 20<br>21<br>22<br>23                         | Aldeba-<br>ran.   | 23. 1. 21<br>35. 1. 34<br>47. 13. 32<br>59. 40. 26                                                          | 24. 30. 51<br>36. 32. 21<br>48. 46. 2<br>61. 14. 56                                                           | 26. 0. 29<br>38. 3. 19<br>50. 18. 48<br>62. 49. 42                                                         | 27. 30. 15<br>39. 34. 29<br>51. 51. 48<br>64. 24. 45                                                        |
| 24<br>25<br>26                               | Pollux.           | 30. 35. 7<br>42. 51. 43<br>55. 41. 53                                                                       | 32. 4. 36<br>44. 26. 29                                                                                       | 33. 34. 57<br>46. 1. 40                                                                                    | 35. 6. 8<br>47. 37. 20                                                                                      |
| 26<br>27<br>28                               | Regulus.          | 18. 46. 54<br>32. 14. 22<br>45. 57. 11                                                                      | 20. 26. 43<br>33. 56. 30<br>47. 40. 51                                                                        | 22. 6. 53<br>35. 38. 51<br>49. 24. 41                                                                      | 23. 47. 23<br>37. 21. 25<br>51. 8. 40                                                                       |

[24] FEBRUARY 1774.

Configurations of the SATELLITES of JUPITER  
at 7 o' th' Clock in the Evening.

|    |         |       |       |       |       |       |
|----|---------|-------|-------|-------|-------|-------|
| 1  |         | 2 6 4 | ⊙     | 1.    | 3     |       |
| 2  |         | 4.    | ⊙     | 2.    | 3.    | 1.C   |
| 3  | 4.      |       | ⊙     | 1.    | 3.    | 2.    |
| 4  | 4.      | 3. 2. | ⊙     | 1.    |       |       |
| 5  | 4.      | 3.    | 1 6 2 | ⊙     |       |       |
| 6  | 4.      | 3.    | ⊙     | 1.    | 2.    |       |
| 7  |         | 4.    | 1     | ⊙     | 2 6 3 |       |
| 8  |         | 2.    | 4.    | ⊙     | 1.    | 3.    |
| 9  |         |       | 1     | ⊙     | 2.    | 4.    |
| 10 | 1 ●     |       | ⊙     | 3.    | 2.    | 4.    |
| 11 |         | 3. 2. | ⊙     | 1.    |       | 4.    |
| 12 |         | 3.    | 2.    | ⊙     |       | 4.    |
| 13 |         | 3.    | ⊙     | 1.    | 2.    | 4.    |
| 14 | 3.0     |       | 1     | ⊙     | 2.    | 4.    |
| 15 |         | 2.    | ⊙     | 1.    | 3.    | 4.    |
| 16 | 2.0     |       | 1     | ⊙     | 4.    | 3.    |
| 17 |         |       | 4.    | ⊙     | 1.    | 3. 2. |
| 18 |         | 4.    | 3. 2. | ⊙     | 1.    |       |
| 19 |         | 4.    | 3.    | 2.    | ⊙     | 1.    |
| 20 | 4.      | 3.    | ⊙     | 1 6 2 |       |       |
| 21 | 4.      |       | 1.    | 3     | ⊙     | 2.    |
| 22 | 4.      |       | 2.    | ⊙     | 1.    | 3.    |
| 23 |         | 4.    | 1.    | 2     | ⊙     | 3.    |
| 24 |         |       | ⊙     | 1.    | 2 6 3 |       |
| 25 | 1.0 2 ● |       | 3.    | 4     | ⊙     |       |
| 26 |         | 3.    | 2.    | 1.    | ⊙     | 4.    |
| 27 |         | 3.    | ⊙     | 1 6 2 |       | 4.    |
| 28 |         |       | 1.    | 3     | ⊙     | 2.    |



| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.               | Phases of the Moon.                     |
|--------------------|-------------------|--------------------------------------|-----------------------------------------|
|                    |                   |                                      | D. H. M.                                |
|                    |                   |                                      | Last Quarter — 4. 22. 21                |
|                    |                   |                                      | New Moon — 11. 21. 55                   |
|                    |                   |                                      | First Quarter — 19. 20. 31              |
|                    |                   |                                      | Full Moon — 27. 11. 28                  |
|                    |                   |                                      | Other Phenomena.                        |
|                    |                   |                                      | D.                                      |
|                    |                   |                                      | 1. ♀ Stationary.                        |
|                    |                   |                                      | ♄ ♀ 21 <sup>h</sup> . 17'.              |
|                    |                   |                                      | 3. ♄ ♀ 7 <sup>h</sup> . 27'.            |
|                    |                   |                                      | ♄ ♀ 11 <sup>h</sup> . 15'.              |
|                    |                   |                                      | 8. ♄ ♀ 4 <sup>h</sup> . 16'.            |
|                    |                   |                                      | 10. ♄ ♀ 6 <sup>h</sup> . 56'.           |
|                    |                   |                                      | 11. ☉ eclipsed, invisible.              |
|                    |                   |                                      | 13. ♂ ♀ ♀ diff. Lat. 7°. 50'.           |
|                    |                   |                                      | 17. ♄ ♀ 13 <sup>h</sup> . 38'.          |
|                    |                   |                                      | ♄ 1 ad ♀ 15 <sup>h</sup> . 47'.         |
|                    |                   |                                      | ♄ 2 ad ♀ 16 <sup>h</sup> . 18'.         |
|                    |                   |                                      | ♄ 21 <sup>h</sup> . 41'.                |
|                    |                   |                                      | 19. ♄ ♀ ♀ diff. Lat. 51'.               |
|                    |                   |                                      | ♄ ♀ ♀ diff. Lat. 2°. 40'.               |
|                    |                   |                                      | 20. ☉ enters ♀ at 0 <sup>h</sup> . 43'. |
|                    |                   |                                      | 23. ♄ ♀ 19 <sup>h</sup> . 55'.          |
|                    |                   |                                      | 24. ♄ ♀ 0 <sup>h</sup> . 49'.           |
|                    |                   |                                      | 26. ♄ ♀ 2 <sup>h</sup> . 24'.           |
|                    |                   |                                      | ♄ ♀ 12 <sup>h</sup> . 15'.              |
|                    |                   |                                      | 27. ♄ ♀ 1 <sup>h</sup> . 41'.           |
|                    |                   |                                      | 28. ♄ ♀ 0 <sup>h</sup> . 37'.           |
|                    |                   |                                      | 29. ♄ ♀ 3 <sup>h</sup> . 54'.           |
|                    |                   |                                      | 30. ♄ ♀ 14 <sup>h</sup> . 8'.           |
|                    |                   |                                      | ♄ ♀ 17 <sup>h</sup> . 50'.              |
| 1                  | Tu.               | David.                               |                                         |
| 2                  | W.                | Chad.                                |                                         |
| 3                  | Th.               |                                      |                                         |
| 4                  | F.                |                                      |                                         |
| 5                  | Sa.               | <i>Prs. of Hesse born.</i>           |                                         |
| 6                  | Su.               | 3 <sup>d</sup> Sunday in Lent.       |                                         |
| 7                  | M.                | Perpetua.                            |                                         |
| 8                  | Tu.               |                                      |                                         |
| 9                  | W.                |                                      |                                         |
| 10                 | Th.               |                                      |                                         |
| 11                 | F.                |                                      |                                         |
| 12                 | Sa.               | Gregory M.                           |                                         |
| 13                 | Su.               | 4 <sup>th</sup> Sunday in Lent. Mid- |                                         |
| 14                 | M.                | [Lent Sunday.                        |                                         |
| 15                 | Tu.               |                                      |                                         |
| 16                 | W.                |                                      |                                         |
| 17                 | Th.               |                                      |                                         |
| 18                 | F.                | Edw. K. of West. Sax.                |                                         |
| 19                 | Sa.               | <i>Prs. Louisa Ann born.</i>         |                                         |
| 20                 | Su.               | 5 <sup>th</sup> Sunday in Lent.      |                                         |
| 21                 | M.                | Benedict.                            |                                         |
| 22                 | Tu.               |                                      |                                         |
| 23                 | W.                |                                      |                                         |
| 24                 | Th.               | [Cam. T. ends.                       |                                         |
| 25                 | F.                | <i>Annunciation of V. Mary.</i>      |                                         |
| 26                 | Sa.               | Oxford Term ends.                    |                                         |
| 27                 | Su.               | 6 <sup>th</sup> Sunday in Lent. Palm |                                         |
| 28                 | M.                | [Sunday.                             |                                         |
| 29                 | Tu.               |                                      |                                         |
| 30                 | W.                |                                      |                                         |
| 31                 | Th.               |                                      |                                         |

[26]

## MARCH 1774.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Add. | Diff |
|--------------------|-------------------|------------------|---------------------------|----------------------|----------------------|------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.                | S.   |
| 1                  | Tu.               | 11. 11. 2. 6     | 22.59. 0,9                | 7. 26. 9             | 12. 37,3             | 12,6 |
| 2                  | W.                | 11. 12. 2. 10    | 22.53.44,9                | 7. 3. 16             | 12. 24,7             | 13,0 |
| 3                  | Th.               | 11. 13. 2. 12    | 22.57.28,4                | 6. 40. 18            | 12. 11,7             | 13,5 |
| 4                  | F.                | 11. 14. 2. 12    | 23. 1.11,4                | 6. 17. 15            | 11. 58,2             | 13,9 |
| 5                  | Sa.               | 11. 15. 2. 11    | 23. 4.54,0                | 5. 54. 6             | 11. 44,3             | 14,4 |
| 6                  | Su.               | 11. 16. 2. 8     | 23. 8.36,1                | 5. 30. 52            | 11. 29,9             | 14,7 |
| 7                  | M.                | 11. 17. 2. 4     | 23.12.17,9                | 5. 7. 33             | 11. 15,2             | 15,1 |
| 8                  | Tu.               | 11. 18. 1. 58    | 23.15.59,4                | 4. 44. 10            | 11. 0,1              | 15,5 |
| 9                  | W.                | 11. 19. 1. 50    | 23.19.40,5                | 4. 20. 44            | 10. 44,6             | 15,7 |
| 10                 | Th.               | 11. 20. 1. 41    | 23.23.21,2                | 3. 57. 14            | 10. 28,9             | 16,1 |
| 11                 | F.                | 11. 21. 1. 30    | 23.27. 1,6                | 3. 33. 42            | 10. 12,8             | 16,4 |
| 12                 | Sa.               | 11. 22. 1. 17    | 23.30.41,7                | 3. 10. 7             | 9. 56,4              | 16,7 |
| 13                 | Su.               | 11. 23. 1. 2     | 23.34.21,5                | 2. 46. 29            | 9. 39,7              | 16,9 |
| 14                 | M.                | 11. 24. 0. 45    | 23.38. 1,1                | 2. 22. 50            | 9. 22,8              | 17,2 |
| 15                 | Tu.               | 11. 25. 0. 25    | 23.41.40,4                | 1. 59. 10            | 9. 5,6               | 17,5 |
| 16                 | W.                | 11. 26. 0. 4     | 23.45.19,4                | 1. 35. 29            | 8. 48,1              | 17,7 |
| 17                 | Th.               | 11. 26. 59. 40   | 23.48.58,2                | 1. 11. 47            | 8. 30,4              | 17,9 |
| 18                 | F.                | 11. 27. 59. 14   | 23.52.36,8                | 0. 48. 5             | 8. 12,5              | 18,1 |
| 19                 | Sa.               | 11. 28. 58. 45   | 23.56.15,3                | 0. 24. 23            | 7. 54,4              | 18,3 |
| 20                 | Su.               | 11. 29. 58. 14   | 23.59.53,5                | 0. 0. 42             | 7. 36,1              | 18,3 |
| 21                 | M.                | 0. 0. 57. 41     | 0. 3.31,6                 | 0. 22. 58            | 7. 17,8              | 18,5 |
| 22                 | Tu.               | 0. 1. 57. 6      | 0. 7. 9,7                 | 0. 46. 37            | 6. 59,3              | 18,6 |
| 23                 | W.                | 0. 2. 56. 28     | 0.10.47,6                 | 1. 10. 15            | 6. 40,7              | 18,7 |
| 24                 | Th.               | 0. 3. 55. 47     | 0.14.25,4                 | 1. 33. 50            | 6. 22,0              | 18,8 |
| 25                 | F.                | 0. 4. 55. 4      | 0.18. 3,1                 | 1. 57. 23            | 6. 3,2               | 18,8 |
| 26                 | Sa.               | 0. 5. 54. 19     | 0.21.40,8                 | 2. 20. 53            | 5. 44,4              | 18,7 |
| 27                 | Su.               | 0. 6. 53. 33     | 0.25.18,5                 | 2. 44. 20            | 5. 25,7              | 18,8 |
| 28                 | M.                | 0. 7. 52. 44     | 0.28.56,3                 | 3. 7. 44             | 5. 6,9               | 18,8 |
| 29                 | Tu.               | 0. 8. 51. 53     | 0.32.34,1                 | 3. 31. 5             | 4. 48,1              | 18,6 |
| 30                 | W.                | 0. 9. 51. 0      | 0.36.11,9                 | 3. 54. 22            | 4. 29,5              | 18,6 |
| 31                 | Th.               | 0. 10. 50. 5     | 0.39.49,8                 | 4. 17. 34            | 4. 10,9              | 18,5 |

| M A R C H 1774. [27] |                                  |                                                    |                                    |                                        |                                 |
|----------------------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
| Days of the Month.   | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|                      | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1                    | 16. 10, 7                        | 1. 5, 3                                            | 2. 30, 2                           | 9. 996457                              | 5. 22. 56                       |
| 7                    | 16. 9, 2                         | 1. 4, 9                                            | 2. 29, 7                           | 9. 997166                              | 5. 22. 37                       |
| 13                   | 16. 7, 5                         | 1. 4, 6                                            | 2. 29, 2                           | 9. 997888                              | 5. 22. 18                       |
| 19                   | 16. 5, 9                         | 1. 4, 4                                            | 2. 28, 8                           | 9. 998612                              | 5. 21. 59                       |
| 25                   | 16. 4, 2                         | 1. 4, 3                                            | 2. 28, 3                           | 9. 999344                              | 5. 21. 40                       |

The Eclipses of JUPITER's Satellites will not be visible  
this Month, JUPITER being too near the Sun.



| [28] MARCH 1774.                                           |                                   |                                  |                                 |                                |                   |                           |
|------------------------------------------------------------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|---------------------------|
| Days.                                                      | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric Lati-<br>tude. | Declina-<br>tion. | Passage<br>over<br>Merid. |
|                                                            | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                     |
| MERCURY. Gr. El. 24 <sup>d</sup> .                         |                                   |                                  |                                 |                                |                   |                           |
| 1                                                          | 11. 19. 45                        | 5. 49 S                          | 11. 13. 21                      | 1. 33 S                        | 7. 59 S           | 0. 11                     |
| 7                                                          | 0. 19. 46                         | 3. 5 S                           | 11. 25. 2                       | 0. 47 S                        | 2. 42 S           | 0. 31                     |
| 13                                                         | 1. 24. 56                         | 1. 6 N                           | 0. 6. 30                        | 0. 18 N                        | 2. 52 N           | 0. 49                     |
| 19                                                         | 3. 2. 38                          | 5. 6                             | 0. 16. 30                       | 1. 33                          | 7. 56             | 1. 2                      |
| 25                                                         | 4. 8. 9                           | 6. 56                            | 0. 23. 29                       | 2. 39                          | 11. 23            | 1. 5                      |
| VENUS. Inf. ♂ 22 <sup>d</sup> . 21 <sup>h</sup> .          |                                   |                                  |                                 |                                |                   |                           |
| 1                                                          | 4. 27. 19                         | 3. 14 N                          | 0. 11. 1                        | 6. 48 N                        | 10. 37 N          | 1. 40                     |
| 7                                                          | 5. 7. 3                           | 3. 21                            | 0. 10. 27                       | 7. 42                          | 11. 12            | 1. 14                     |
| 13                                                         | 5. 16. 48                         | 3. 23                            | 0. 8. 28                        | 8. 17                          | 10. 58            | 0. 43                     |
| 19                                                         | 5. 26. 31                         | 3. 19                            | 0. 5. 15                        | 8. 27                          | 9. 50             | 0. 10                     |
| 25                                                         | 6. 6. 14                          | 3. 9                             | 0. 1. 28                        | 8. 2                           | 7. 57             | 23. 29                    |
| MARS.                                                      |                                   |                                  |                                 |                                |                   |                           |
| 1                                                          | 10. 26. 29                        | 1. 50 S                          | 11. 2. 33                       | 1. 4 S                         | 11. 35 S          | 23. 30                    |
| 7                                                          | 11. 0. 16                         | 1. 49                            | 11. 7. 17                       | 1. 3                           | 9. 51             | 23. 26                    |
| 13                                                         | 11. 4. 5                          | 1. 47                            | 11. 11. 59                      | 1. 3                           | 8. 3              | 23. 21                    |
| 19                                                         | 11. 7. 53                         | 1. 45                            | 11. 16. 42                      | 1. 2                           | 6. 12             | 23. 17                    |
| 25                                                         | 11. 11. 42                        | 1. 42                            | 11. 21. 24                      | 1. 1                           | 4. 21             | 23. 12                    |
| JUPITER.                                                   |                                   |                                  |                                 |                                |                   |                           |
| 1                                                          | 0. 18. 32                         | 1. 18 S                          | 0. 12. 31                       | 1. 7 S                         | 3. 55 N           | 1. 57                     |
| 7                                                          | 0. 19. 5                          | 1. 18                            | 0. 13. 53                       | 1. 6                           | 4. 28             | 1. 40                     |
| 13                                                         | 0. 19. 38                         | 1. 18                            | 0. 15. 16                       | 1. 6                           | 5. 1              | 1. 23                     |
| 19                                                         | 0. 20. 11                         | 1. 18                            | 0. 16. 40                       | 1. 5                           | 5. 34             | 1. 6                      |
| 25                                                         | 0. 20. 43                         | 1. 17                            | 0. 18. 5                        | 1. 5                           | 6. 6              | 0. 50                     |
| SATURN. ♂ 12 <sup>d</sup> . 18 <sup>h</sup> <sub>4</sub> . |                                   |                                  |                                 |                                |                   |                           |
| 1                                                          | 5. 22. 24                         | 2. 11 N                          | 5. 23. 44                       | 2. 27 N                        | 4. 45 N           | 12. 49                    |
| 7                                                          | 5. 22. 37                         | 2. 11                            | 5. 23. 15                       | 2. 27                          | 4. 57             | 12. 25                    |
| 13                                                         | 5. 22. 49                         | 2. 12                            | 5. 22. 47                       | 2. 28                          | 5. 8              | 12. 1                     |
| 19                                                         | 5. 23. 1                          | 2. 12                            | 5. 22. 19                       | 2. 28                          | 5. 19             | 11. 37                    |
| 25                                                         | 5. 23. 13                         | 2. 12                            | 5. 21. 51                       | 2. 28                          | 5. 30             | 11. 14                    |

# MARCH 1774.

[29]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D.M.S.                   |
| 1                  | Tu.               | 6. 19. 33. 38             | 6. 26. 31. 16                 | 2. 25. 54 N              | 2. 58. 59 N              |
| 2                  | W.                | 7. 3. 30. 56              | 7. 10. 32. 29                 | 3. 29. 30                | 3. 57. 1                 |
| 3                  | Th.               | 7. 17. 35. 29             | 7. 24. 39. 42                 | 4. 21. 3                 | 4. 41. 9                 |
| 4                  | F.                | 8. 1. 44. 49              | 8. 8. 50. 37                  | 4. 57. 3                 | 5. 8. 26                 |
| 5                  | Sa.               | 8. 15. 55. 48             | 8. 23. 3. 0                   | 5. 15. 6                 | 5. 16. 57                |
| 6                  | Su.               | 9. 0. 8. 58               | 9. 7. 14. 25                  | 5. 13. 58                | 5. 6. 14                 |
| 7                  | M.                | 9. 14. 18. 58             | 9. 21. 22. 25                 | 4. 53. 51                | 4. 37. 0                 |
| 8                  | Tu.               | 9. 28. 24. 18             | 10. 5. 24. 17                 | 4. 16. 4                 | 3. 51. 24                |
| 9                  | W.                | 10. 12. 22. 8             | 10. 19. 17. 20                | 3. 23. 24                | 2. 52. 36                |
| 10                 | Th.               | 10. 26. 9. 43             | 11. 2. 58. 56                 | 2. 19. 26                | 1. 44. 36                |
| 11                 | F.                | 11. 9. 44. 41             | 11. 16. 26. 36                | 1. 8. 33 N               | 0. 31. 51 N              |
| 12                 | Sa.               | 11. 23. 4. 42             | 11. 29. 38. 46                | 0. 4. 54 S               | 0. 41. 9 S               |
| 13                 | Su.               | 0. 6. 8. 42               | 0. 12. 34. 29                 | 1. 16. 36                | 1. 50. 42                |
| 14                 | M.                | 0. 18. 56. 9              | 0. 25. 13. 47                 | 2. 22. 57                | 2. 53. 11                |
| 15                 | Tu.               | 1. 1. 27. 38              | 1. 7. 37. 53                  | 3. 20. 59                | 3. 46. 10                |
| 16                 | W.                | 1. 13. 44. 47             | 1. 19. 48. 47                 | 4. 8. 32                 | 4. 27. 54                |
| 17                 | Th.               | 1. 25. 50. 14             | 2. 1. 49. 37                  | 4. 44. 11                | 4. 57. 16                |
| 18                 | F.                | 2. 7. 47. 22              | 2. 13. 44. 5                  | 5. 7. 3                  | 5. 13. 31                |
| 19                 | Sa.               | 2. 19. 40. 16             | 2. 25. 36. 34                 | 5. 16. 37                | 5. 16. 21                |
| 20                 | Su.               | 3. 1. 33. 25              | 3. 7. 31. 33                  | 5. 12. 42                | 5. 5. 40                 |
| 21                 | M.                | 3. 13. 31. 32             | 3. 19. 33. 56                 | 4. 55. 18                | 4. 41. 34                |
| 22                 | Tu.               | 3. 25. 39. 12             | 4. 1. 48. 1                   | 4. 24. 35                | 4. 4. 24                 |
| 23                 | W.                | 4. 8. 0. 50               | 4. 14. 17. 58                 | 3. 41. 8                 | 3. 14. 58                |
| 24                 | Th.               | 4. 20. 39. 58             | 4. 27. 6. 58                  | 2. 46. 3                 | 2. 14. 38                |
| 25                 | F.                | 5. 3. 39. 18              | 5. 10. 17. 2                  | 1. 41. 4                 | 1. 5. 42 S               |
| 26                 | Sa.               | 5. 17. 0. 13              | 5. 23. 48. 41                 | 0. 28. 55 S              | 0. 8. 44 N               |
| 27                 | Su.               | 6. 0. 42. 17              | 6. 7. 40. 40                  | 0. 46. 41 N              | 1. 24. 21                |
| 28                 | M.                | 6. 14. 43. 28             | 6. 21. 50. 5                  | 2. 1. 10                 | 2. 36. 23                |
| 29                 | Tu.               | 6. 28. 59. 54             | 7. 6. 12. 19                  | 3. 9. 23                 | 3. 39. 33                |
| 30                 | W.                | 7. 13. 26. 28             | 7. 20. 41. 47                 | 4. 6. 18                 | 4. 29. 12                |
| 31                 | Th.               | 7. 27. 57. 26             | 8. 5. 12. 41                  | 4. 47. 45                | 5. 1. 39                 |

[30]

## MARCH 1774.

| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Asc. at Midn. | D's Declinat. at Noon. | D's Declin. at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|-------------------------|------------------------|----------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                   | D. M.                  | D. M.                |
| 1                  | Tu.               | 20       | 14. 57                  | 199. 0                    | 205. 41                 | 5. 25 S                | 7. 28 S              |
| 2                  | W.                | 21       | 15. 51                  | 212. 30                   | 219. 23                 | 9. 26                  | 11. 15               |
| 3                  | Th.               | 22       | 16. 46                  | 226. 23                   | 233. 29                 | 12. 55                 | 14. 25               |
| 4                  | F.                | 23       | 17. 42                  | 240. 41                   | 247. 58                 | 15. 41                 | 16. 43               |
| 5                  | Sa.               | 24       | 18. 39                  | 255. 19                   | 262. 44                 | 17. 30                 | 18. 1                |
| 6                  | Sa.               | 25       | 19. 37                  | 270. 10                   | 277. 36                 | 18. 14                 | 18. 10               |
| 7                  | M.                | 26       | 20. 34                  | 285. 0                    | 292. 21                 | 17. 50                 | 17. 12               |
| 8                  | Tu.               | 27       | 21. 30                  | 299. 38                   | 306. 48                 | 16. 19                 | 15. 12               |
| 9                  | W.                | 28       | 22. 24                  | 313. 51                   | 320. 48                 | 13. 51                 | 12. 19               |
| 10                 | Th.               | 29       | 23. 16                  | 327. 36                   | 334. 18                 | 10. 37                 | 8. 48                |
| 11                 | F.                | 1        | ♂                       | 340. 52                   | 347. 19                 | 6. 52                  | 4. 52                |
| 12                 | Sa.               | 2        | 0. 5                    | 353. 41                   | 359. 57                 | 2. 50 S                | 0. 46 S              |
| 13                 | Sa.               | 3        | 0. 52                   | 6. 9                      | 12. 17                  | 1. 16 N                | 3. 16 N              |
| 14                 | M.                | 4        | 1. 38                   | 18. 23                    | 24. 26                  | 5. 13                  | 7. 5                 |
| 15                 | Tu.               | 5        | 2. 25                   | 30. 29                    | 36. 30                  | 8. 51                  | 10. 30               |
| 16                 | W.                | 6        | 3. 11                   | 42. 33                    | 48. 36                  | 12. 1                  | 13. 24               |
| 17                 | Th.               | 7        | 3. 57                   | 54. 40                    | 60. 45                  | 14. 38                 | 15. 41               |
| 18                 | F.                | 8        | 4. 44                   | 66. 52                    | 73. 1                   | 16. 35                 | 17. 17               |
| 19                 | Sa.               | 9        | 5. 30                   | 79. 11                    | 85. 24                  | 17. 48                 | 18. 7                |
| 20                 | Sa.               | 10       | 6. 19                   | 91. 38                    | 97. 53                  | 18. 15                 | 18. 10               |
| 21                 | M.                | 11       | 7. 7                    | 104. 10                   | 110. 28                 | 17. 54                 | 17. 24               |
| 22                 | Tu.               | 12       | 7. 55                   | 116. 47                   | 123. 7                  | 16. 43                 | 15. 49               |
| 23                 | W.                | 13       | 8. 44                   | 129. 27                   | 135. 48                 | 14. 44                 | 13. 27               |
| 24                 | Th.               | 14       | 9. 33                   | 142. 10                   | 148. 33                 | 12. 0                  | 10. 23               |
| 25                 | F.                | 15       | 10. 22                  | 154. 57                   | 161. 23                 | 8. 37                  | 6. 43                |
| 26                 | Sa.               | 16       | 11. 13                  | 167. 51                   | 174. 23                 | 4. 42                  | 2. 36 N              |
| 27                 | Sa.               | 17       | 12. 4                   | 180. 58                   | 187. 37                 | 0. 26 N                | 1. 46 S              |
| 28                 | M.                | 18       | 12. 56                  | 194. 20                   | 201. 10                 | 3. 57 S                | 6. 6                 |
| 29                 | Tu.               | 19       | 13. 50                  | 208. 5                    | 215. 7                  | 8. 11                  | 10. 9                |
| 30                 | W.                | 20       | 14. 46                  | 222. 14                   | 229. 29                 | 11. 59                 | 13. 37               |
| 31                 | Th.               | 21       | 15. 44                  | 236. 49                   | 244. 15                 | 15. 3                  | 16. 15               |



# MARCH 1774.

[31]

| Days of the Month. | Days of the Week. | Semidr. $\Delta$ at Noon. | Semidr. $\Delta$ at Mid-night. | Hor. Par. $\Delta$ at Noon. | Hor. Par. $\Delta$ at Mid-night. | Propor. Lo- gar. at Noon. | Propor. Lo- gar. at Midn. |
|--------------------|-------------------|---------------------------|--------------------------------|-----------------------------|----------------------------------|---------------------------|---------------------------|
|                    |                   | M. S.                     | M. S.                          | M. S.                       | M. S.                            |                           |                           |
| 1                  | Tu.               | 16. 2                     | 16. 4                          | 58. 49                      | 58. 59                           | 4858                      | 4845                      |
| 2                  | W.                | 16. 6                     | 16. 8                          | 59. 7                       | 59. 13                           | 4835                      | 4828                      |
| 3                  | Th.               | 16. 9                     | 16. 11                         | 59. 18                      | 59. 22                           | 4822                      | 4817                      |
| 4                  | F.                | 16. 11                    | 16. 12                         | 59. 25                      | 59. 26                           | 4813                      | 4812                      |
| 5                  | Sa.               | 16. 12                    | 16. 11                         | 59. 26                      | 59. 25                           | 4812                      | 4813                      |
| 6                  | Su.               | 16. 11                    | 16. 10                         | 59. 23                      | 59. 20                           | 4816                      | 4820                      |
| 7                  | M.                | 16. 9                     | 16. 7                          | 59. 15                      | 59. 10                           | 4826                      | 4832                      |
| 8                  | Tu.               | 16. 5                     | 16. 3                          | 59. 3                       | 58. 54                           | 4841                      | 4852                      |
| 9                  | W.                | 16. 0                     | 15. 57                         | 58. 44                      | 58. 32                           | 4864                      | 4878                      |
| 10                 | Th.               | 15. 53                    | 15. 49                         | 58. 19                      | 58. 5                            | 4895                      | 4912                      |
| 11                 | F.                | 15. 45                    | 15. 41                         | 57. 50                      | 57. 33                           | 4931                      | 4952                      |
| 12                 | Sa.               | 15. 36                    | 15. 31                         | 57. 15                      | 56. 56                           | 4975                      | 4999                      |
| 13                 | Su.               | 15. 26                    | 15. 21                         | 56. 39                      | 56. 21                           | 5021                      | 5044                      |
| 14                 | M.                | 15. 16                    | 15. 12                         | 56. 3                       | 55. 46                           | 5067                      | 5089                      |
| 15                 | Tu.               | 15. 7                     | 15. 3                          | 55. 30                      | 55. 15                           | 5110                      | 5129                      |
| 16                 | W.                | 15. 0                     | 14. 56                         | 55. 1                       | 54. 50                           | 5148                      | 5162                      |
| 17                 | Th.               | 14. 54                    | 14. 52                         | 54. 40                      | 54. 32                           | 5175                      | 5186                      |
| 18                 | F.                | 14. 50                    | 14. 49                         | 54. 27                      | 54. 24                           | 5193                      | 5197                      |
| 19                 | Sa.               | 14. 49                    | 14. 50                         | 54. 23                      | 54. 26                           | 5198                      | 5194                      |
| 20                 | Su.               | 14. 51                    | 14. 53                         | 54. 31                      | 54. 38                           | 5187                      | 5178                      |
| 21                 | M.                | 14. 56                    | 14. 59                         | 54. 48                      | 55. 0                            | 5165                      | 5149                      |
| 22                 | Tu.               | 15. 3                     | 15. 8                          | 55. 15                      | 55. 32                           | 5129                      | 5107                      |
| 23                 | W.                | 15. 13                    | 15. 19                         | 55. 50                      | 56. 11                           | 5084                      | 5056                      |
| 24                 | Th.               | 15. 25                    | 15. 30                         | 56. 33                      | 56. 55                           | 5028                      | 5000                      |
| 25                 | F.                | 15. 37                    | 15. 43                         | 57. 18                      | 57. 41                           | 4971                      | 4942                      |
| 26                 | Sa.               | 15. 49                    | 15. 55                         | 58. 4                       | 58. 25                           | 4913                      | 4887                      |
| 27                 | Su.               | 16. 1                     | 16. 6                          | 58. 46                      | 59. 4                            | 4861                      | 4839                      |
| 28                 | M.                | 16. 10                    | 16. 14                         | 59. 20                      | 59. 34                           | 4820                      | 4802                      |
| 29                 | Tu.               | 16. 17                    | 16. 19                         | 59. 45                      | 59. 53                           | 4789                      | 4779                      |
| 30                 | W.                | 16. 21                    | 16. 21                         | 59. 59                      | 60. 1                            | 4772                      | 4770                      |
| 31                 | Th.               | 16. 21                    | 16. 21                         | 60. 1                       | 59. 58                           | 4770                      | 4773                      |

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.     | Noon.       | 3 Hours.    | 6 Hours.   | 9 Hours.   |
|-------|------------------|-------------|-------------|------------|------------|
|       |                  | D. M. S.    | D. M. S.    | D. M. S.   | D. M. S.   |
| 1     | Antares.         | 47. 31. 35  | 45. 49. 55  | 44. 8. 19  | 42. 26. 49 |
| 2     |                  | 34. 1. 39   | 32. 21. 20  | 30. 41. 27 | 29. 2. 12  |
| 3     |                  | 20. 58. 36  |             |            |            |
| 3     | $\alpha$ Aquilæ. | 71. 19. 0   | 69. 44. 30  | 68. 17. 8  | 66. 36. 0  |
| 4     |                  | 58. 50. 12  | 57. 18. 14  | 55. 46. 46 | 54. 15. 54 |
| 5     |                  | 46. 52. 25  |             |            |            |
| 3     | The Sun.         | 115. 22. 1  | 113. 43. 44 | 112. 5. 24 | 110. 27. 1 |
| 4     |                  | 102. 14. 32 | 100. 35. 58 | 98. 57. 23 | 97. 18. 48 |
| 5     |                  | 89. 5. 37   | 87. 26. 59  | 85. 48. 21 | 84. 9. 43  |
| 6     |                  | 75. 56. 46  | 74. 18. 14  | 72. 39. 44 | 71. 1. 16  |
| 7     |                  | 62. 49. 35  | 61. 11. 22  | 59. 33. 13 | 57. 55. 7  |
| 8     |                  | 49. 45. 46  | 48. 8. 9    | 46. 30. 38 | 44. 53. 12 |
| 14    | Aldebaran.       | 47. 40. 20  | 46. 5. 20   | 44. 30. 35 | 42. 56. 7  |
| 15    |                  | 35. 7. 36   | 33. 34. 38  | 32. 1. 56  | 30. 29. 28 |
| 16    |                  | 22. 50. 34  | 21. 19. 26  | 19. 48. 29 | 18. 17. 44 |
| 17    | Pollux.          | 55. 21. 29  | 53. 54. 20  | 52. 27. 25 | 51. 0. 45  |
| 18    |                  | 43. 51. 4   | 42. 25. 53  | 41. 0. 59  | 39. 36. 23 |
| 19    |                  | 32. 38. 30  |             |            |            |
| 19    | Regulus.         | 67. 10. 29  | 65. 41. 55  | 64. 13. 21 | 62. 44. 46 |
| 20    |                  | 55. 21. 22  | 53. 52. 29  | 52. 23. 31 | 50. 54. 27 |
| 21    |                  | 43. 27. 16  | 41. 57. 25  | 40. 27. 24 | 38. 57. 13 |
| 22    |                  | 31. 23. 40  | 29. 52. 21  | 28. 20. 49 | 26. 49. 6  |
| 23    |                  | 19. 7. 29   |             |            |            |
| 23    | Spica $\kappa$   | 72. 35. 41  | 71. 2. 9    | 69. 28. 19 | 67. 54. 9  |
| 24    |                  | 59. 58. 38  | 58. 22. 35  | 56. 46. 12 | 55. 9. 30  |
| 25    |                  | 47. 1. 3    | 45. 22. 23  | 43. 43. 24 | 42. 4. 6   |
| 26    |                  | 33. 43. 13  | 32. 2. 14   | 30. 21. 2  | 28. 39. 40 |
| 27    |                  | 20. 11. 13  |             |            |            |
| 27    | Antares          | 66. 3. 35   | 64. 20. 48  | 62. 37. 47 | 60. 54. 32 |
| 28    |                  | 52. 15. 39  | 50. 31. 29  | 48. 47. 14 | 47. 2. 57  |
| 29    |                  | 38. 21. 52  | 36. 37. 56  | 34. 54. 16 | 33. 10. 58 |
| 30    |                  | 24. 42. 44  |             |            |            |
| 30    | $\alpha$ Aquilæ. | 75. 2. 48   | 73. 25. 14  | 71. 47. 50 | 70. 10. 38 |
| 31    |                  | 62. 9. 10   | 60. 34. 4   | 58. 59. 28 | 57. 25. 26 |
| A. 1  |                  | 49. 45. 41  |             |            |            |

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days.                           | Stars Names.     | 12 Hours.                                                                       | 15 Hours.                                                                                     | 18 Hours.                                                                                    | 21 Hours.                                                                                      |
|---------------------------------|------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
|                                 |                  | D. M. S.                                                                        | D. M. S.                                                                                      | D. M. S.                                                                                     | D. M. S.                                                                                       |
| 1<br>2                          | Antares.         | 40. 45. 23<br>27. 23. 36                                                        | 39. 4. 6<br>25. 45. 51                                                                        | 37. 23. 0<br>24. 9. 1                                                                        | 35. 42. 12<br>22. 33. 11                                                                       |
| 3<br>4                          | $\alpha$ Aquilæ. | 65. 2. 8<br>52. 45. 41                                                          | 63. 28. 37<br>51. 16. 10                                                                      | 61. 55. 25<br>49. 47. 24                                                                     | 60. 22. 36<br>48. 19. 28                                                                       |
| 2<br>3<br>4<br>5<br>6<br>7<br>8 | The Sun.         | 108. 48. 35<br>95. 40. 12<br>82. 31. 5<br>69. 22. 50<br>56. 17. 5<br>43. 15. 53 | 120. 16. 33<br>107. 10. 7<br>94. 1. 34<br>80. 52. 29<br>67. 44. 27<br>54. 39. 8<br>41. 38. 41 | 118. 38. 26<br>105. 31. 37<br>92. 22. 56<br>79. 13. 53<br>66. 6. 7<br>53. 1. 16<br>40. 1. 38 | 117. 0. 15<br>103. 53. 5<br>90. 44. 16<br>77. 35. 19<br>64. 27. 50<br>51. 23. 28<br>38. 24. 36 |
| 13<br>14<br>15<br>16            | Aldebaran.       | 54. 3. 5<br>41. 21. 54<br>28. 57. 14<br>16. 47. 10                              | 52. 26. 59<br>39. 47. 57<br>27. 25. 14                                                        | 50. 51. 10<br>38. 14. 15<br>25. 53. 28                                                       | 49. 15. 37<br>36. 40. 48<br>24. 21. 55                                                         |
| 16<br>17<br>18                  | Pollux.          | 61. 12. 20<br>49. 34. 19<br>38. 12. 6                                           | 59. 44. 18<br>48. 8. 8<br>36. 48. 9                                                           | 58. 16. 28<br>46. 42. 11<br>35. 24. 34                                                       | 56. 48. 52<br>45. 16. 30<br>34. 1. 21                                                          |
| 19<br>20<br>21<br>22            | Regulus.         | 61. 16. 11<br>49. 25. 16<br>37. 26. 52<br>25. 17. 10                            | 59. 47. 33<br>47. 55. 58<br>35. 56. 21<br>23. 45. 2                                           | 58. 18. 53<br>46. 26. 32<br>34. 25. 39<br>22. 12. 43                                         | 56. 50. 10<br>44. 56. 58<br>32. 54. 45<br>20. 40. 12                                           |
| 23<br>24<br>25<br>26            | Spica $\alpha$   | 66. 19. 41<br>53. 32. 28<br>40. 24. 30<br>26. 58. 9                             | 64. 44. 54<br>51. 55. 6<br>38. 44. 36<br>25. 16. 31                                           | 63. 9. 48<br>50. 17. 24<br>37. 4. 24<br>23. 34. 48                                           | 61. 34. 23<br>48. 39. 23<br>35. 23. 56<br>21. 53. 1                                            |
| 27<br>28<br>29                  | Antares.         | 59. 11. 5<br>45. 18. 38<br>31. 28. 6                                            | 57. 27. 27<br>43. 34. 19<br>29. 45. 46                                                        | 55. 43. 39<br>41. 50. 3<br>28. 4. 2                                                          | 53. 59. 43<br>40. 5. 54<br>26. 23. 0                                                           |
| 30<br>31                        | $\alpha$ Aquilæ. | 68. 33. 41<br>55. 52. 2                                                         | 66. 57. 1<br>54. 19. 18                                                                       | 65. 20. 41<br>52. 47. 18                                                                     | 63. 44. 43<br>51. 16. 5                                                                        |



[34]

MARCH 1774.

Distances of  $\beta$ 's Center from  $\odot$ , and from Stars west of her.

| Days | Stars Names.            | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|------|-------------------------|-------------|-------------|-------------|-------------|
|      |                         | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1    | Regulus.                | 52. 52. 47  | 54. 37. 3   | 56. 21. 27  | 58. 5. 58   |
| 2    |                         | 66. 50. 5   | 68. 35. 12  | 70. 20. 25  | 72. 5. 43   |
| 3    | Spica $\alpha$          | 27. 37. 25  | 29. 21. 45  | 31. 6. 14   | 32. 50. 55  |
| 4    |                         | 41. 36. 12  | 43. 21. 30  | 45. 6. 52   | 46. 52. 17  |
| 5    |                         | 55. 40. 6   | 57. 25. 44  | 59. 11. 23  | 60. 57. 2   |
| 6    |                         | 69. 45. 17  |             |             |             |
| 6    | Antares.                | 25. 27. 30  | 27. 5. 47   | 28. 44. 46  | 30. 24. 21  |
| 7    |                         | 38. 49. 31  | 40. 31. 30  | 42. 13. 39  | 43. 56. 0   |
| 8    |                         | 52. 29. 7   | 54. 11. 52  | 55. 54. 38  | 57. 37. 23  |
| 9    |                         | 66. 10. 35  | 67. 53. 1   | 69. 35. 20  | 71. 17. 32  |
| 10   | $\rho$ Capri-<br>corni. | 25. 19. 38  | 27. 2. 31   | 28. 45. 12  | 30. 27. 42  |
| 11   |                         | 38. 57. 10  |             |             |             |
| 15   | The Sun.                |             |             | 39. 25. 59  | 40. 51. 2   |
| 16   |                         | 47. 52. 52  | 49. 16. 37  | 50. 40. 10  | 52. 3. 32   |
| 17   |                         | 58. 57. 40  | 60. 20. 2   | 61. 42. 16  | 63. 4. 22   |
| 18   |                         | 69. 53. 10  | 71. 14. 40  | 72. 36. 7   | 73. 57. 31  |
| 19   |                         | 80. 43. 52  | 82. 5. 8    | 83. 26. 26  | 84. 47. 44  |
| 20   |                         | 91. 34. 47  | 92. 56. 25  | 94. 18. 8   | 95. 39. 58  |
| 21   |                         | 102. 31. 2  | 103. 53. 42 | 105. 16. 32 | 106. 39. 33 |
| 22   |                         | 113. 37. 38 | 115. 1. 55  | 116. 26. 26 | 117. 51. 16 |
| 20   | Aldeba-<br>ran.         | 24. 48. 58  | 26. 18. 0   | 27. 47. 7   | 29. 16. 21  |
| 21   |                         | 36. 44. 25  | 38. 14. 29  | 39. 44. 44  | 41. 15. 10  |
| 22   |                         | 48. 50. 17  | 50. 21. 59  | 51. 53. 56  | 53. 26. 9   |
| 23   |                         | 61. 11. 18  | 62. 45. 10  | 64. 19. 21  | 65. 53. 50  |
| 24   |                         | 73. 51. 11  |             |             |             |
| 24   | Pollux.                 | 31. 55. 58  | 33. 25. 52  | 34. 56. 33  | 36. 28. 0   |
| 25   |                         | 44. 15. 42  | 45. 51. 4   | 47. 26. 59  | 49. 3. 26   |
| 26   |                         | 57. 13. 4   |             |             |             |
| 26   | Regulus.                | 20. 19. 40  | 22. 0. 51   | 23. 42. 27  | 25. 24. 29  |
| 27   |                         | 34. 0. 26   | 35. 44. 39  | 37. 29. 10  | 39. 14. 0   |
| 28   |                         | 48. 2. 22   | 49. 48. 47  | 51. 35. 25  | 53. 22. 15  |
| 29   |                         | 62. 19. 10  | 64. 7. 1    | 65. 55. 0   | 67. 43. 6   |
| 30   |                         | 76. 44. 45  |             |             |             |
| 30   |                         | 23. 32. 36  | 25. 19. 17  | 27. 6. 12   | 28. 53. 19  |
| 31   | Spica $\alpha$          | 37. 50. 51  | 39. 38. 32  | 41. 26. 13  | 43. 13. 54  |
| A. 1 |                         | 52. 11. 52  |             |             |             |

# MARCH 1774.

[35]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

| Days.                                        | Stars Names.             | 12 Hours.                                                                                                  | 15 Hours.                                                                                      | 18 Hours.                                                                                    | 21 Hours.                                                                                       |
|----------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|                                              |                          | D. M. S.                                                                                                   | D. M. S.                                                                                       | D. M. S.                                                                                     | D. M. S.                                                                                        |
| 1<br>2                                       | Regulus.                 | 59. 50. 35<br>73. 51. 6                                                                                    | 61. 35. 18                                                                                     | 63. 20. 8                                                                                    | 65. 5. 4                                                                                        |
| 2<br>3<br>4<br>5                             | Spica $\alpha$           | 20. 43. 3<br>34. 35. 46<br>48. 37. 46<br>62. 42. 42                                                        | 22. 26. 12<br>36. 20. 43<br>50. 23. 18<br>64. 28. 21                                           | 24. 9. 40<br>38. 5. 47<br>52. 8. 52<br>66. 14. 0                                             | 25. 53. 26<br>39. 50. 57<br>53. 54. 28<br>67. 59. 39                                            |
| 6<br>7<br>8<br>9                             | Antares.                 | 32. 4. 31<br>45. 38. 29<br>59. 20. 7<br>72. 59. 37                                                         | 33. 45. 10<br>47. 21. 2<br>61. 2. 49                                                           | 35. 26. 16<br>49. 3. 40<br>62. 45. 28                                                        | 37. 7. 44<br>50. 46. 22<br>64. 28. 3                                                            |
| 9<br>10                                      | $\beta$ Capri-<br>corni. | 18. 26. 26<br>32. 10. 0                                                                                    | 20. 9. 59<br>33. 52. 6                                                                         | 21. 53. 22<br>35. 34. 0                                                                      | 23. 36. 35<br>37. 15. 41                                                                        |
| 15<br>16<br>17<br>18<br>19<br>20<br>21<br>22 | The Sun.                 | 42. 15. 50<br>53. 26. 42<br>64. 26. 20<br>75. 18. 51<br>86. 9. 3<br>97. 1. 54<br>108. 2. 46<br>119. 16. 21 | 43. 40. 25<br>54. 49. 41<br>65. 48. 11<br>76. 40. 8<br>87. 30. 24<br>98. 23. 58<br>109. 26. 10 | 45. 4. 47<br>56. 12. 30<br>67. 9. 56<br>78. 1. 24<br>88. 51. 47<br>99. 46. 11<br>110. 49. 46 | 46. 28. 56<br>57. 35. 10<br>68. 31. 36<br>79. 22. 39<br>90. 13. 14<br>101. 8. 32<br>112. 13. 35 |
| 19<br>20<br>21<br>22<br>23                   | Aldeba-<br>ran.          | 18. 53. 40<br>30. 45. 41<br>42. 45. 47<br>54. 58. 37<br>67. 28. 38                                         | 20. 22. 24<br>32. 15. 9<br>44. 16. 35<br>56. 31. 22<br>69. 3. 46                               | 21. 51. 11<br>33. 44. 46<br>45. 47. 36<br>58. 4. 24<br>70. 39. 14                            | 23. 20. 2<br>35. 14. 31<br>47. 18. 50<br>59. 37. 42<br>72. 15. 2                                |
| 24<br>25                                     | Pollux.                  | 38. 0. 12<br>50. 40. 24                                                                                    | 39. 33. 6<br>52. 17. 52                                                                        | 41. 6. 40<br>53. 55. 49                                                                      | 42. 40. 53<br>55. 34. 13                                                                        |
| 26<br>27<br>28<br>29                         | Regulus.                 | 27. 6. 56<br>40. 59. 8<br>55. 9. 18<br>69. 31. 18                                                          | 28. 49. 46<br>42. 44. 33<br>56. 56. 32<br>71. 19. 35                                           | 30. 32. 58<br>44. 30. 14<br>58. 43. 55<br>73. 7. 55                                          | 32. 16. 31<br>46. 16. 10<br>60. 31. 28<br>74. 56. 19                                            |
| 30<br>31                                     | Spica $\alpha$           | 32. 40. 36<br>45. 1. 35                                                                                    | 32. 25. 1<br>46. 49. 13                                                                        | 34. 15. 33<br>48. 36. 49                                                                     | 36. 3. 10<br>50. 24. 22                                                                         |

JUPITER's Satellites will not be visible this Month,  
JUPITER being too near the SUN.



| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.          | Phases of the Moon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|-------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                   |                                 | D. H. M.<br>Last Quarter — 3. 4. 58<br>New Moon — 10. 12. 19<br>First Quarter — 18. 15. 14<br>Full Moon — 25. 21. 34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1                  | F.                | <i>Good-Friday.</i>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2                  | Sa.               |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3                  | Sa.               | <i>Easter-Day.</i> R.Bp.Chich.  | <p style="text-align: center;">Other Phenomena.</p> <p>D.</p> <p>1. ☿ ♀ ☿ diff. Lat. 7°. 49'.</p> <p>4. ☿ ♀ ☿ 10<sup>h</sup>. 2'.</p> <p>6. ☿ ♀ ☿ 13<sup>h</sup>. 36'.</p> <p>9. ☿ ♀ ☿ 2<sup>h</sup>. 13'.</p> <p>13. ♀ Stationary.</p> <p>☿ ☿ ☿ 21<sup>h</sup>. 39'.</p> <p>☿ ☿ ☿ 23<sup>h</sup>. 46'.</p> <p>14. ☿ ☿ ☿ 0<sup>h</sup>. 17'.</p> <p>☿ ☿ ☿ 6<sup>h</sup>. 10'.</p> <p>1½'. N. of ☿'s cent.</p> <p>Em. 7<sup>h</sup>. 19'. * 4'. N.</p> <p>19. ☿ ☿ ☿ diff. Lat. 6'.</p> <p>☿ enters ☿ at 13<sup>h</sup>. 33'.</p> <p>20. ☿ ☿ ☿ 5<sup>h</sup>. 8'.</p> <p>☿ ☿ ☿ 10<sup>h</sup>. 5'.</p> <p>22. ☿ ☿ ☿ 12<sup>h</sup>. 27'.</p> <p>☿ ☿ ☿ 22<sup>h</sup>. 22'.</p> <p>23. ☿ ☿ ☿ 11<sup>h</sup>. 53'.</p> <p>24. ♀ Stationary.</p> <p>☿ ☿ ☿ 10<sup>h</sup>. 45'.</p> <p>25. ☿ ☿ ☿ diff. Lat. 44'.</p> <p>☿ ☿ ☿ 13<sup>h</sup>. 43'.</p> <p>26. ☿ ☿ ☿ 23<sup>h</sup>. 7'.</p> <p>27. ☿ ☿ ☿ 2<sup>h</sup>. 43'.</p> <p>☿ ☿ ☿ 6<sup>h</sup>. 44'.</p> <p>☿ ☿ ☿ diff. Lat. 35'.</p> |
| 4                  | M.                | <i>Easter-Mon.</i> St. Ambrose. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5                  | Tu.               | <i>Easter-Tuesday.</i>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 6                  | W.                |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7                  | Th.               |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 8                  | F.                |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 9                  | Sa.               |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 10                 | Su.               | <i>1st Sunday after Easter,</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 11                 | M.                | <i>[Low-Sunday.]</i>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 12                 | Tu.               |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 13                 | W.                | Oxf. and Camb. Terms            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 14                 | Th.               | <i>[begin.]</i>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 15                 | F.                |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 16                 | Sa.               |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 17                 | Su.               | <i>2d Sunday after Easter.</i>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 18                 | M.                | From Easter in 15 days,         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 19                 | Tu.               | Alphege. <i>[1 ret.]</i>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 20                 | W.                | Easter Term begins.             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 21                 | Th.               |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 22                 | F.                |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 23                 | Sa.               | <i>St. George.</i>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 24                 | Su.               | <i>3d Sunday after Easter.</i>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 25                 | M.                | <i>St. Mark.</i> From Easter in |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 26                 | Tu.               | <i>[3 weeks, 2 ret.]</i>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 27                 | W.                |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 28                 | Th.               |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 29                 | F.                |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 30                 | Sa.               |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

[38]

A P R I L 1774.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time. Add. | Diff. |
|--------------------|-------------------|------------------|---------------------------|----------------------|----------------------|-------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.                | S.    |
| 1                  | F.                | 0. 11. 49. 9     | 0. 43. 27, 7              | 4. 40. 42            | 3. 52, 4             | 18, 4 |
| 2                  | Sa.               | 0. 12. 48. 10    | 0. 47. 5, 9               | 5. 3. 45             | 3. 34, 0             | 18, 1 |
| 3                  | Su.               | 0. 13. 47. 10    | 0. 50. 44, 3              | 5. 26. 42            | 3. 15, 9             | 17, 9 |
| 4                  | M.                | 0. 14. 46. 9     | 0. 54. 22, 9              | 5. 49. 34            | 2. 58, 0             | 17, 8 |
| 5                  | Tu.               | 0. 15. 45. 6     | 0. 58. 1, 6               | 6. 12. 21            | 2. 40, 2             | 17, 7 |
| 6                  | W.                | 0. 16. 44. 1     | 1. 1. 40, 4               | 6. 35. 1             | 2. 22, 5             | 17, 5 |
| 7                  | Th.               | 0. 17. 42. 54    | 1. 5. 19, 5               | 6. 57. 34            | 2. 5, 0              | 17, 1 |
| 8                  | F.                | 0. 18. 41. 46    | 1. 8. 58, 9               | 7. 20. 1             | 1. 47, 9             | 16, 9 |
| 9                  | Sa.               | 0. 19. 40. 36    | 1. 12. 38, 5              | 7. 42. 20            | 1. 31, 0             | 16, 6 |
| 10                 | Su.               | 0. 20. 39. 23    | 1. 16. 18, 3              | 8. 4. 31             | 1. 14, 4             | 16, 4 |
| 11                 | M.                | 0. 21. 38. 9     | 1. 19. 58, 5              | 8. 26. 34            | 0. 58, 0             | 16, 0 |
| 12                 | Tu.               | 0. 22. 36. 53    | 1. 23. 39, 0              | 8. 48. 29            | 0. 42, 0             | 15, 7 |
| 13                 | W.                | 0. 23. 35. 35    | 1. 27. 19, 7              | 9. 10. 15            | 0. 26, 3             | 15, 4 |
| 14                 | Th.               | 0. 24. 34. 15    | 1. 31. 0, 8               | 9. 31. 52            | 0. 10, 9             | 15, 1 |
| 15                 | F.                | 0. 25. 32. 53    | 1. 34. 42, 2              | 9. 53. 19            | Sub. 4, 2            | 14, 7 |
| 16                 | Sa.               | 0. 26. 31. 28    | 1. 38. 24, 0              | 10. 14. 36           | 0. 18, 9             | 14, 5 |
| 17                 | Su.               | 0. 27. 30. 1     | 1. 42. 6, 1               | 10. 35. 43           | 0. 33, 4             | 14, 1 |
| 18                 | M.                | 0. 28. 28. 32    | 1. 45. 48, 6              | 10. 56. 40           | 0. 47, 5             | 13, 6 |
| 19                 | Tu.               | 0. 29. 27. 1     | 1. 49. 31, 4              | 11. 17. 26           | 1. 1, 1              | 13, 2 |
| 20                 | W.                | 1. 0. 25. 28     | 1. 53. 14, 7              | 11. 38. 1            | 1. 14, 3             | 12, 9 |
| 21                 | Th.               | 1. 1. 23. 52     | 1. 56. 58, 4              | 11. 58. 24           | 1. 27, 2             | 12, 5 |
| 22                 | F.                | 1. 2. 22. 14     | 2. 0. 42, 5               | 12. 18. 35           | 1. 39, 7             | 12, 0 |
| 23                 | Sa.               | 1. 3. 20. 34     | 2. 4. 27, 0               | 12. 38. 34           | 1. 51, 7             | 11, 5 |
| 24                 | Su.               | 1. 4. 18. 52     | 2. 8. 11, 9               | 12. 58. 21           | 2. 3, 2              | 11, 1 |
| 25                 | M.                | 1. 5. 17. 8      | 2. 11. 57, 3              | 13. 17. 55           | 2. 14, 3             | 10, 6 |
| 26                 | Tu.               | 1. 6. 15. 23     | 2. 15. 43, 3              | 13. 37. 16           | 2. 24, 9             | 10, 1 |
| 27                 | W.                | 1. 7. 13. 36     | 2. 19. 29, 8              | 13. 56. 24           | 2. 35, 0             | 9, 6  |
| 28                 | Th.               | 1. 8. 11. 47     | 2. 23. 16, 7              | 14. 15. 17           | 2. 44, 6             | 9, 0  |
| 29                 | F.                | 1. 9. 9. 56      | 2. 27. 4, 2               | 14. 33. 57           | 2. 53, 6             | 8, 5  |
| 30                 | Sa.               | 1. 10. 8. 4      | 2. 30. 52, 2              | 14. 52. 23           | 3. 2, 1              | 7, 9  |

| Days. | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|-------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|       | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1     | 16. 2,3                          | 1. 4,4                                             | 2. 27,6                            | 0. 000230                              | 5. 21. 18                       |
| 7     | 16. 0,6                          | 1. 4,5                                             | 2. 27,1                            | 0. 000996                              | 5. 20. 59                       |
| 13    | 15. 59,0                         | 1. 4,8                                             | 2. 26,6                            | 0. 001734                              | 5. 20. 40                       |
| 19    | 15. 57,5                         | 1. 5,1                                             | 2. 26,1                            | 0. 002430                              | 5. 20. 20                       |
| 25    | 15. 55,9                         | 1. 5,5                                             | 2. 25,6                            | 0. 003105                              | 5. 20. 1                        |

The Eclipses of JUPITER's Satellites will not be visible  
this Month, JUPITER being too near the Sun.



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A P R I L. 1774.

| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric La-<br>titude. | Decli-<br>nation. | Passage<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|---------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                     |

M E R C U R Y. Inf. ♂ 11<sup>d</sup>. 6<sup>h</sup>.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 5. 12. 52 | 6. 14 N | 0. 26. 29 | 3. 16 N | 13. 17 N | 0. 50  |
| 7  | 6. 7. 4   | 4. 23   | 0. 24. 42 | 2. 53   | 12. 16   | 0. 22  |
| 13 | 6. 27. 35 | 2. 12   | 0. 20. 35 | 1. 39   | 9. 35    | 23. 41 |
| 19 | 7. 15. 47 | 0. 0    | 0. 16. 52 | 0. 0    | 6. 38    | 23. 9  |
| 25 | 8. 2. 43  | 2. 2 S  | 0. 15. 31 | 1. 30 S | 4. 45    | 22. 45 |

## V E N U S.

|    |           |         |            |         |         |        |
|----|-----------|---------|------------|---------|---------|--------|
| 1  | 6. 17. 32 | 2. 51 N | 11. 27. 37 | 6. 59 N | 5. 27 N | 22. 53 |
| 7  | 6. 27. 11 | 2. 29   | 11. 25. 25 | 5. 43   | 3. 26   | 22. 25 |
| 13 | 7. 6. 49  | 2. 5    | 11. 24. 47 | 4. 22   | 1. 56   | 22. 4  |
| 19 | 7. 16. 25 | 1. 37   | 11. 25. 28 | 3. 5    | 1. 2    | 21. 47 |
| 25 | 7. 25. 59 | 1. 5    | 11. 27. 24 | 1. 53   | 0. 42   | 21. 34 |

## M A R S.

|    |            |         |            |         |         |        |
|----|------------|---------|------------|---------|---------|--------|
| 1  | 11. 16. 7  | 1. 38 S | 11. 26. 52 | 0. 58 S | 2. 7 S  | 23. 6  |
| 7  | 11. 19. 54 | 1. 34   | 0. 1. 32   | 0. 56   | 0. 16 S | 23. 1  |
| 13 | 11. 23. 40 | 1. 30   | 0. 6. 10   | 0. 54   | 1. 36 N | 22. 56 |
| 19 | 11. 27. 25 | 1. 26   | 0. 10. 47  | 0. 52   | 3. 28   | 22. 51 |
| 25 | 0. 1. 9    | 1. 21   | 0. 15. 22  | 0. 49   | 5. 18   | 22. 45 |

J U P I T E R. ♂ 11<sup>d</sup>. 17<sup>h</sup>.

|    |           |         |           |        |         |        |
|----|-----------|---------|-----------|--------|---------|--------|
| 1  | 0. 21. 22 | 1. 17 S | 0. 19. 46 | 1. 4 S | 6. 45 N | 0. 31  |
| 7  | 0. 21. 55 | 1. 17   | 0. 21. 12 | 1. 4   | 7. 18   | 0. 13  |
| 13 | 0. 22. 28 | 1. 17   | 0. 22. 39 | 1. 4   | 7. 50   | 23. 55 |
| 19 | 0. 23. 1  | 1. 17   | 0. 24. 6  | 1. 4   | 8. 22   | 23. 38 |
| 25 | 0. 23. 34 | 1. 16   | 0. 25. 32 | 1. 4   | 8. 53   | 23. 22 |

## S A T U R N.

|    |           |         |           |         |         |        |
|----|-----------|---------|-----------|---------|---------|--------|
| 1  | 5. 23. 28 | 2. 13 N | 5. 21. 20 | 2. 27 N | 5. 42 N | 10. 47 |
| 7  | 5. 23. 40 | 2. 13   | 5. 20. 55 | 2. 27   | 5. 51   | 10. 24 |
| 13 | 5. 23. 52 | 2. 13   | 5. 20. 33 | 2. 26   | 6. 0    | 10. 1  |
| 19 | 5. 24. 4  | 2. 13   | 5. 20. 13 | 2. 26   | 6. 6    | 9. 38  |
| 25 | 5. 24. 17 | 2. 14   | 5. 19. 56 | 2. 25   | 6. 12   | 9. 14  |

# APRIL 1774.

[41]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D. M. S.                 |
| 1                  | F.                | 8. 12. 27. 1              | 8. 19. 39. 49                 | 5. 10. 44 N              | 5. 14. 55 N              |
| 2                  | Sa.               | 8. 26. 50. 35             | 9. 3. 58. 56                  | 5. 14. 2                 | 5. 8. 21                 |
| 3                  | Su.               | 9. 11. 4. 24              | 9. 18. 6. 56                  | 4. 57. 59                | 4. 43. 11                |
| 4                  | M.                | 9. 25. 6. 20              | 10. 2. 2. 21                  | 4. 24. 18                | 4. 1. 38                 |
| 5                  | Tu.               | 10. 8. 55. 7              | 10. 15. 44. 27                | 3. 35. 41                | 3. 6. 52                 |
| 6                  | W.                | 10. 22. 30. 21            | 10. 29. 13. 4                 | 2. 35. 40                | 2. 2. 36                 |
| 7                  | Th.               | 11. 5. 52. 21             | 11. 12. 28. 29                | 1. 28. 7                 | 0. 52. 41 N              |
| 8                  | F.                | 11. 19. 1. 22             | 11. 25. 31. 8                 | 0. 17. 1 N               | 0. 18. 39 S              |
| 9                  | Sa.               | 0. 1. 57. 49              | 0. 8. 21. 26                  | 0. 53. 47 S              | 1. 27. 52                |
| 10                 | Su.               | 0. 14. 42. 7              | 0. 20. 59. 47                 | 2. 0. 36                 | 2. 31. 36                |
| 11                 | M.                | 0. 27. 14. 33             | 1. 3. 26. 34                  | 3. 0. 25                 | 3. 26. 54                |
| 12                 | Tu.               | 1. 9. 35. 59              | 1. 15. 42. 44                 | 3. 50. 46                | 4. 11. 47                |
| 13                 | W.                | 1. 21. 47. 7              | 1. 27. 49. 22                 | 4. 29. 46                | 4. 44. 39                |
| 14                 | Th.               | 2. 3. 49. 33              | 2. 9. 48. 13                  | 4. 56. 16                | 5. 4. 37                 |
| 15                 | F.                | 2. 15. 45. 32             | 2. 21. 41. 52                 | 5. 9. 36                 | 5. 11. 16                |
| 16                 | Sa.               | 2. 27. 37. 49             | 3. 3. 33. 40                  | 5. 9. 35                 | 5. 4. 35                 |
| 17                 | Su.               | 3. 9. 30. 2               | 3. 15. 27. 31                 | 4. 56. 19                | 4. 44. 49                |
| 18                 | M.                | 3. 21. 26. 29             | 3. 27. 27. 43                 | 4. 30. 10                | 4. 12. 25                |
| 19                 | Tu.               | 4. 3. 31. 42              | 4. 9. 39. 10                  | 3. 51. 46                | 3. 28. 14                |
| 20                 | W.                | 4. 15. 50. 36             | 4. 22. 6. 37                  | 3. 2. 4                  | 2. 33. 22                |
| 21                 | Th.               | 4. 28. 27. 51             | 5. 4. 54. 38                  | 2. 2. 26                 | 1. 29. 27                |
| 22                 | F.                | 5. 11. 27. 27             | 5. 18. 6. 41                  | 0. 54. 50 S              | 0. 18. 57 S              |
| 23                 | Sa.               | 5. 24. 52. 30             | 6. 1. 44. 58                  | 0. 17. 46 N              | 0. 54. 47 N              |
| 24                 | Su.               | 6. 8. 44. 8               | 6. 15. 49. 40                 | 1. 31. 34                | 2. 7. 25                 |
| 25                 | M.                | 6. 23. 1. 4               | 7. 0. 17. 54                  | 2. 41. 45                | 3. 13. 49                |
| 26                 | Tu.               | 7. 7. 39. 16              | 7. 15. 4. 14                  | 3. 42. 59                | 4. 8. 30                 |
| 27                 | W.                | 7. 22. 31. 46             | 8. 0. 0. 44                   | 4. 30. 4                 | 4. 47. 4                 |
| 28                 | Th.               | 8. 7. 29. 56              | 8. 14. 58. 17                 | 4. 59. 3                 | 5. 5. 56                 |
| 29                 | F.                | 8. 22. 24. 37             | 8. 29. 48. 7                  | 5. 7. 36                 | 5. 4. 8                  |
| 30                 | Sa.               | 9. 7. 7. 52               | 9. 14. 23. 18                 | 4. 55. 41                | 4. 42. 33                |

| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Asc. at Midn. | D's Declinat. at Noon. | D's Declin. at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|-------------------------|------------------------|----------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                   | D. M.                  | D. M.                |
| 1                  | F.                | 22       | 16. 43                  | 251. 41                   | 259. 12                 | 17. 11 S               | 17. 50 S             |
| 2                  | Sa.               | 23       | 17. 40                  | 266. 42                   | 274. 11                 | 18. 12                 | 18. 16               |
| 3                  | Su.               | 24       | 18. 38                  | 281. 37                   | 288. 58                 | 18. 3                  | 17. 34               |
| 4                  | M.                | 25       | 19. 34                  | 296. 14                   | 303. 22                 | 16. 48                 | 15. 48               |
| 5                  | Tu.               | 26       | 20. 27                  | 310. 23                   | 317. 15                 | 14. 35                 | 13. 10               |
| 6                  | W.                | 27       | 21. 17                  | 324. 0                    | 330. 37                 | 11. 34                 | 9. 51                |
| 7                  | Th.               | 28       | 22. 6                   | 337. 7                    | 343. 31                 | 8. 0                   | 6. 4                 |
| 8                  | F.                | 29       | 22. 53                  | 349. 48                   | 356. 1                  | 4. 5                   | 2. 4 S               |
| 9                  | Sa.               | 30       | 23. 39                  | 2. 10                     | 8. 15                   | 0. 2 S                 | 1. 58 N              |
| 10                 | Su.               | 1        | 0                       | 14. 19                    | 20. 20                  | 3. 57 N                | 5. 52                |
| 11                 | M.                | 2        | 0. 26                   | 26. 22                    | 32. 25                  | 7. 42                  | 9. 26                |
| 12                 | Tu.               | 3        | 1. 12                   | 38. 26                    | 44. 29                  | 11. 3                  | 12. 32               |
| 13                 | W.                | 4        | 1. 58                   | 50. 34                    | 56. 39                  | 13. 53                 | 15. 4                |
| 14                 | Th.               | 5        | 2. 45                   | 62. 47                    | 68. 56                  | 16. 5                  | 16. 55               |
| 15                 | F.                | 6        | 3. 32                   | 75. 6                     | 81. 18                  | 17. 34                 | 18. 1                |
| 16                 | Sa.               | 7        | 4. 19                   | 87. 31                    | 93. 44                  | 18. 17                 | 18. 20               |
| 17                 | Su.               | 8        | 5. 7                    | 99. 58                    | 106. 12                 | 18. 12                 | 17. 51               |
| 18                 | M.                | 9        | 5. 55                   | 112. 26                   | 118. 40                 | 17. 19                 | 16. 34               |
| 19                 | Tu.               | 10       | 6. 43                   | 124. 55                   | 131. 9                  | 15. 38                 | 14. 31               |
| 20                 | W.                | 11       | 7. 31                   | 137. 23                   | 143. 38                 | 13. 12                 | 11. 44               |
| 21                 | Th.               | 12       | 8. 19                   | 149. 55                   | 156. 12                 | 10. 7                  | 8. 20                |
| 22                 | F.                | 13       | 9. 8                    | 162. 33                   | 168. 57                 | 6. 26                  | 4. 25                |
| 23                 | Sa.               | 14       | 9. 58                   | 175. 25                   | 181. 58                 | 2. 19 N                | 0. 8 N               |
| 24                 | Su.               | 15       | 10. 49                  | 188. 38                   | 195. 24                 | 2. 4 S                 | 4. 16 S              |
| 25                 | M.                | 16       | 11. 43                  | 202. 18                   | 209. 21                 | 6. 27                  | 8. 34                |
| 26                 | Tu.               | 17       | 12. 39                  | 216. 31                   | 223. 51                 | 10. 34                 | 12. 25               |
| 27                 | W.                | 18       | 13. 38                  | 231. 18                   | 238. 53                 | 14. 4                  | 15. 30               |
| 28                 | Th.               | 19       | 14. 38                  | 246. 33                   | 254. 17                 | 16. 40                 | 17. 33               |
| 29                 | F.                | 20       | 15. 39                  | 262. 3                    | 269. 48                 | 18. 8                  | 18. 24               |
| 30                 | Sa.               | 21       | 16. 39                  | 277. 29                   | 285. 5                  | 18. 21                 | 18. 0                |



# A P R I L 1774.

[43]

| Days of the Month. | Days of the Week. | Semidr. $\Delta$ at Noon. | Semidr. $\Delta$ at Mid-night. | Hor. Par. $\Delta$ at Noon. | Hor. Par. $\Delta$ at Midnight. | Proport. Lo-Par. at Noon. | Proport. Lo-Par. at Midn. |
|--------------------|-------------------|---------------------------|--------------------------------|-----------------------------|---------------------------------|---------------------------|---------------------------|
|                    |                   | M. S.                     | M. S.                          | M. S.                       | M. S.                           |                           |                           |
| 1                  | F.                | 16. 19                    | 16. 17                         | 59. 53                      | 59. 47                          | 4779                      | 4787                      |
| 2                  | Sa.               | 16. 15                    | 16. 12                         | 59. 38                      | 59. 29                          | 4798                      | 4809                      |
| 3                  | Su.               | 16. 9                     | 16. 6                          | 59. 17                      | 59. 5                           | 4823                      | 4838                      |
| 4                  | M.                | 16. 3                     | 15. 59                         | 58. 53                      | 58. 39                          | 4853                      | 4870                      |
| 5                  | Tu.               | 15. 55                    | 15. 51                         | 58. 26                      | 58. 12                          | 4886                      | 4903                      |
| 6                  | W.                | 15. 48                    | 15. 44                         | 57. 57                      | 57. 43                          | 4922                      | 4940                      |
| 7                  | Th.               | 15. 40                    | 15. 36                         | 57. 28                      | 57. 13                          | 4958                      | 4977                      |
| 8                  | F.                | 15. 31                    | 15. 27                         | 56. 58                      | 56. 43                          | 4996                      | 5015                      |
| 9                  | Sa.               | 15. 23                    | 15. 19                         | 56. 28                      | 56. 13                          | 5035                      | 5054                      |
| 10                 | Su.               | 15. 15                    | 15. 11                         | 55. 58                      | 55. 44                          | 5073                      | 5091                      |
| 11                 | M.                | 15. 7                     | 15. 4                          | 55. 30                      | 55. 17                          | 5110                      | 5127                      |
| 12                 | Tu.               | 15. 0                     | 14. 57                         | 55. 4                       | 54. 53                          | 5144                      | 5158                      |
| 13                 | W.                | 14. 55                    | 14. 52                         | 54. 43                      | 54. 34                          | 5171                      | 5183                      |
| 14                 | Th.               | 14. 50                    | 14. 49                         | 54. 26                      | 54. 21                          | 5194                      | 5201                      |
| 15                 | F.                | 14. 48                    | 14. 47                         | 54. 17                      | 54. 16                          | 5206                      | 5207                      |
| 16                 | Sa.               | 14. 47                    | 14. 48                         | 54. 17                      | 54. 19                          | 5206                      | 5203                      |
| 17                 | Su.               | 14. 50                    | 14. 52                         | 54. 25                      | 54. 33                          | 5195                      | 5185                      |
| 18                 | M.                | 14. 55                    | 14. 58                         | 54. 43                      | 54. 56                          | 5171                      | 5154                      |
| 19                 | Tu.               | 15. 2                     | 15. 7                          | 55. 11                      | 55. 30                          | 5134                      | 5110                      |
| 20                 | W.                | 15. 13                    | 15. 19                         | 55. 50                      | 56. 12                          | 5084                      | 5055                      |
| 21                 | Th.               | 15. 25                    | 15. 32                         | 56. 36                      | 57. 1                           | 5025                      | 4992                      |
| 22                 | F.                | 15. 40                    | 15. 47                         | 57. 28                      | 57. 55                          | 4958                      | 4924                      |
| 23                 | Sa.               | 15. 54                    | 16. 1                          | 58. 22                      | 58. 49                          | 4891                      | 4858                      |
| 24                 | Su.               | 16. 8                     | 16. 15                         | 59. 14                      | 59. 38                          | 4827                      | 4798                      |
| 25                 | M.                | 16. 21                    | 16. 25                         | 59. 59                      | 60. 17                          | 4772                      | 4751                      |
| 26                 | Tu.               | 16. 29                    | 16. 32                         | 60. 31                      | 60. 42                          | 4734                      | 4721                      |
| 27                 | W.                | 16. 34                    | 16. 35                         | 60. 49                      | 60. 51                          | 4712                      | 4710                      |
| 28                 | Th.               | 16. 35                    | 16. 33                         | 60. 50                      | 60. 45                          | 4711                      | 4717                      |
| 29                 | F.                | 15. 31                    | 16. 28                         | 60. 36                      | 60. 24                          | 4728                      | 4742                      |
| 30                 | Sa.               | 16. 24                    | 16. 19                         | 60. 10                      | 59. 53                          | 4759                      | 4779                      |

Distances of J's Center from ☉, and from Stars east of her.

| Days. | Stars Names.       | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|--------------------|-------------|-------------|-------------|-------------|
|       |                    | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | β Capri-<br>corni. | 48. 15. 27  | 46. 27. 31  | 44. 39. 42  | 42. 52. 1   |
| 2     |                    | 33. 55. 32  | 32. 8. 39   | 30. 21. 56  | 28. 35. 22  |
| 3     |                    | 19. 45. 8   | 17. 59. 37  | 16. 14. 16  | 14. 29. 6   |
| 1     | The Sun.           | 119. 14. 14 | 117. 33. 42 | 115. 53. 17 | 114. 12. 59 |
| 2     |                    | 105. 53. 29 | 104. 14. 0  | 102. 34. 40 | 100. 55. 29 |
| 3     |                    | 92. 42. 9   | 91. 3. 59   | 89. 26. 0   | 87. 48. 11  |
| 4     |                    | 79. 41. 4   | 78. 4. 55   | 76. 28. 22  | 74. 51. 59  |
| 5     |                    | 66. 52. 52  | 65. 17. 37  | 63. 42. 33  | 62. 7. 41   |
| 6     |                    | 54. 16. 14  | 52. 42. 29  | 51. 8. 55   | 49. 35. 32  |
| 7     |                    | 41. 51. 48  | 40. 19. 39  | 38. 47. 43  |             |
| 12    | Pollux.            | 71. 9. 34   | 69. 39. 42  | 68. 10. 2   | 66. 40. 35  |
| 13    |                    | 59. 16. 37  | 57. 48. 20  | 56. 20. 23  | 54. 52. 40  |
| 14    |                    | 47. 37. 45  | 46. 11. 30  | 44. 45. 30  | 43. 19. 46  |
| 15    |                    | 36. 15. 52  |             |             |             |
| 15    | Regulus.           | 71. 3. 40   | 69. 35. 1   | 68. 6. 24   | 66. 37. 48  |
| 16    |                    | 59. 15. 13  | 57. 46. 45  | 56. 18. 17  | 54. 49. 48  |
| 17    |                    | 47. 26. 49  | 45. 58. 2   | 44. 29. 11  | 43. 0. 14   |
| 18    |                    | 35. 34. 4   | 34. 4. 27   | 32. 34. 42  | 31. 4. 49   |
| 19    |                    | 23. 33. 2   |             |             |             |
| 19    | Spica 𐌆            | 77. 4. 3    | 75. 32. 52  | 74. 1. 27   | 72. 29. 46  |
| 20    |                    | 64. 47. 27  | 63. 14. 8   | 61. 40. 31  | 60. 6. 35   |
| 21    |                    | 52. 11. 56  | 50. 36. 0   | 48. 59. 43  | 47. 23. 5   |
| 22    |                    | 39. 14. 34  | 37. 35. 49  | 35. 56. 42  | 34. 17. 14  |
| 23    |                    | 25. 55. 26  |             |             |             |
| 23    | Antares.           | 71. 49. 34  | 70. 8. 17   | 68. 26. 36  | 66. 44. 32  |
| 24    |                    | 58. 8. 57   | 56. 24. 52  | 54. 40. 30  | 52. 55. 53  |
| 25    |                    | 44. 9. 39   | 42. 23. 57  | 40. 38. 8   | 38. 52. 21  |
| 26    |                    | 30. 5. 28   |             |             |             |
| 26    | α Aquilæ.          | 80. 16. 50  | 78. 36. 51  | 76. 56. 50  | 75. 16. 50  |
| 27    |                    | 66. 58. 22  | 65. 19. 17  | 63. 40. 33  | 62. 2. 14   |
| 28    |                    | 53. 58. 25  |             |             |             |
| 28    | β Capri-<br>corni. | 53. 11. 47  | 51. 19. 57  | 49. 28. 14  | 47. 36. 38  |
| 29    |                    | 38. 20. 41  | 36. 29. 59  | 34. 39. 28  | 32. 49. 9   |
| 30    | α Pegasi.          | 72. 32. 29  | 70. 50. 21  | 69. 8. 37   | 67. 27. 19  |
| M. 1  |                    | 59. 7. 47   |             |             |             |
| 30    | The Sun.           |             | 121. 10. 39 | 119. 29. 34 | 117. 48. 43 |
| M. 1  |                    | 109. 28. 38 |             |             |             |

A P R I L 1774.

[45]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.             | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.  |
|-------|--------------------------|-------------|-------------|-------------|------------|
|       |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.   |
| 1     | $\beta$ Capri-<br>corni. | 41. 4. 27   | 39. 17. 1   | 37. 29. 43  | 35. 42. 33 |
| 2     |                          | 26. 48. 58  | 25. 2. 45   | 23. 16. 42  | 21. 30. 50 |
| 3     |                          | 12. 44. 6   |             |             |            |
| 1     | The Sun.                 | 112. 32. 49 | 110. 52. 47 | 109. 12. 53 | 107. 33. 7 |
| 2     |                          | 99. 16. 28  | 97. 37. 38  | 95. 58. 58  | 94. 20. 28 |
| 3     |                          | 86. 10. 32  | 84. 33. 3   | 82. 55. 44  | 81. 18. 36 |
| 4     |                          | 73. 15. 48  | 71. 39. 47  | 70. 3. 58   | 68. 28. 19 |
| 5     |                          | 60. 33. 0   | 58. 58. 32  | 57. 24. 15  | 55. 50. 9  |
| 6     |                          | 48. 2. 22   | 46. 29. 25  | 44. 56. 41  | 43. 24. 9  |
| 12    | Pollux.                  | 65. 11. 20  | 63. 42. 18  | 62. 13. 29  | 60. 44. 53 |
| 13    |                          | 53. 25. 11  | 51. 57. 57  | 50. 30. 58  | 49. 4. 14  |
| 14    |                          | 41. 54. 20  | 40. 29. 12  | 39. 4. 25   | 37. 39. 58 |
| 15    | Regulus.                 | 65. 9. 14   | 63. 40. 43  | 62. 12. 13  | 60. 43. 43 |
| 16    |                          | 53. 21. 17  | 51. 52. 44  | 50. 24. 9   | 48. 55. 31 |
| 17    |                          | 41. 31. 12  | 40. 2. 5    | 38. 32. 52  | 37. 3. 32  |
| 18    |                          | 29. 34. 46  | 28. 4. 34   | 26. 34. 13  | 25. 3. 42  |
| 19    | Spica $\alpha$           | 70. 57. 51  | 69. 25. 40  | 67. 53. 12  | 66. 20. 28 |
| 20    |                          | 58. 32. 20  | 56. 57. 44  | 55. 22. 48  | 53. 47. 32 |
| 21    |                          | 45. 46. 6   | 44. 8. 45   | 42. 31. 2   | 40. 52. 58 |
| 22    |                          | 32. 37. 28  | 30. 57. 24  | 29. 17. 2   | 27. 36. 23 |
| 23    | Antares.                 | 65. 2. 6    | 63. 19. 19  | 61. 36. 11  | 59. 52. 44 |
| 24    |                          | 51. 11. 1   | 49. 25. 56  | 47. 40. 39  | 45. 55. 12 |
| 25    |                          | 37. 6. 38   | 35. 21. 1   | 33. 35. 35  | 31. 50. 23 |
| 26    | $\alpha$ Aquilæ.         | 73. 36. 52  | 71. 56. 59  | 70. 17. 15  | 68. 37. 43 |
| 27    |                          | 60. 24. 19  | 58. 46. 56  | 57. 10. 7   | 55. 33. 56 |
| 28    | $\beta$ Capri-<br>corni. | 45. 45. 9   | 43. 53. 48  | 42. 2. 36   | 40. 11. 34 |
| 29    |                          | 30. 59. 1   |             |             |            |
| 29    | $\alpha$ Pegasi.         | 79. 24. 29  | 77. 41. 1   | 75. 57. 50  | 74. 14. 59 |
| 30    |                          | 65. 46. 26  | 64. 6. 1    | 62. 26. 6   | 60. 46. 41 |
| 30    | The Sun.                 | 116. 2. 5   | 114. 27. 48 | 112. 47. 47 | 111. 8. 4  |



Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

| Days                                         | Stars Names.             | Noon.                                                                                                     | 3 Hours.                                                                                                      | 6 Hours.                                                                                                    | 9 Hours.                                                                                   |
|----------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                                              |                          | D. M. S.                                                                                                  | D. M. S.                                                                                                      | D. M. S.                                                                                                    | D. M. S.                                                                                   |
| 1<br>2                                       | Spica $\kappa$           | 52. 11. 52<br>66. 28. 9                                                                                   | 53. 59. 17                                                                                                    | 55. 46. 35                                                                                                  | 57. 33. 47                                                                                 |
| 2<br>3<br>4<br>5<br>6                        | Antares.                 | 22. 26. 31<br>35. 42. 23<br>49. 15. 32<br>62. 46. 36<br>76. 9. 42                                         | 24. 3. 38<br>37. 23. 44<br>50. 57. 12<br>64. 27. 30                                                           | 25. 41. 37<br>39. 5. 12<br>52. 38. 47<br>66. 8. 16                                                          | 27. 20. 22<br>40. 46. 49<br>54. 20. 19<br>67. 48. 53                                       |
| 6<br>7<br>8<br>9                             | $\beta$ Capri-<br>corni. | 21. 39. 45<br>35. 3. 55<br>48. 15. 57<br>61. 15. 33                                                       | 23. 20. 57<br>36. 43. 36<br>49. 54. 5                                                                         | 25. 1. 58<br>38. 23. 6<br>51. 32. 1                                                                         | 26. 42. 47<br>40. 2. 24<br>53. 9. 46                                                       |
| 14<br>15<br>16<br>17<br>18<br>19<br>20<br>21 | The Sun.                 | 39. 30. 53<br>50. 24. 14<br>61. 14. 2<br>72. 4. 10<br>82. 59. 15<br>94. 4. 8<br>105. 23. 48<br>117. 2. 52 | 40. 52. 52<br>51. 45. 34<br>62. 35. 12<br>73. 25. 42<br>84. 21. 43<br>95. 28. 11<br>106. 50. 2<br>118. 31. 48 | 42. 14. 45<br>53. 6. 51<br>63. 56. 22<br>74. 47. 19<br>85. 44. 22<br>96. 52. 29<br>108. 16. 34<br>120. 1. 6 | 43. 36. 32<br>54. 28. 6<br>65. 17. 34<br>76. 9. 2<br>87. 7. 11<br>98. 17. 2<br>109. 43. 25 |
| 19<br>20                                     | Aldeba-<br>ran.          | 56. 42. 46<br>69. 1. 57                                                                                   | 58. 14. 15<br>70. 35. 37                                                                                      | 59. 45. 59<br>72. 9. 37                                                                                     | 61. 17. 58<br>73. 43. 56                                                                   |
| 21<br>22                                     | Pollux.                  | 39. 16. 4<br>51. 48. 11                                                                                   | 40. 47. 59<br>53. 24. 44                                                                                      | 42. 20. 32<br>55. 1. 50                                                                                     | 43. 53. 42<br>56. 39. 27                                                                   |
| 23<br>24<br>25<br>26                         | Regulus.                 | 28. 10. 45<br>42. 2. 47<br>56. 20. 23<br>70. 58. 11                                                       | 29. 53. 12<br>43. 48. 42<br>58. 9. 9                                                                          | 31. 36. 6<br>45. 35. 0<br>59. 58. 13                                                                        | 33. 19. 27<br>47. 21. 41<br>61. 47. 35                                                     |
| 26<br>27<br>28<br>29                         | Spica $\kappa$           | 17. 53. 48<br>32. 28. 15<br>47. 16. 42<br>62. 3. 37                                                       | 19. 41. 25<br>34. 19. 0<br>49. 7. 52<br>63. 53. 51                                                            | 21. 29. 38<br>36. 9. 52<br>50. 58. 59<br>65. 44. 1                                                          | 23. 18. 24<br>38. 0. 52<br>52. 50. 3<br>67. 33. 57                                         |
| 30<br>M. 1                                   | Antares.                 | 31. 54. 53<br>45. 47. 9                                                                                   | 33. 38. 32                                                                                                    | 35. 22. 26                                                                                                  | 37. 6. 31                                                                                  |

A P R I L 1774.

[47]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

| Days. | Stars Names.         | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|-------|----------------------|-------------|-------------|-------------|-------------|
|       |                      | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | Spica $\alpha$       | 59. 20. 54  | 61. 7. 54   | 62. 54. 47  | 64. 41. 32  |
| 2     | Antares.             | 28. 59. 47  | 30. 39. 49  | 32. 20. 17  | 34. 1. 11   |
| 3     |                      | 42. 28. 33  | 44. 10. 16  | 45. 52. 2   | 47. 33. 48  |
| 4     |                      | 56. 1. 46   | 57. 43. 8   | 59. 24. 24  | 61. 5. 33   |
| 5     |                      | 69. 29. 22  | 71. 9. 42   | 72. 49. 52  | 74. 29. 52  |
| 6     | $\beta$ Capri-corni. | 28. 23. 24  | 30. 3. 49   | 31. 44. 2   | 33. 24. 4   |
| 7     |                      | 41. 41. 31  | 43. 20. 25  | 44. 59. 7   | 46. 37. 38  |
| 8     |                      | 54. 47. 19  | 56. 24. 40  | 58. 1. 49   | 59. 38. 47  |
| 14    | The Sun.             | 44. 58. 14  | 46. 19. 51  | 47. 41. 23  | 49. 2. 51   |
| 15    |                      | 55. 49. 18  | 57. 10. 30  | 58. 31. 41  | 59. 52. 52  |
| 16    |                      | 66. 38. 47  | 68. 0. 3    | 69. 21. 21  | 70. 42. 43  |
| 17    |                      | 77. 30. 51  | 78. 52. 45  | 80. 14. 47  | 81. 36. 57  |
| 18    |                      | 88. 30. 11  | 89. 53. 22  | 91. 16. 44  | 92. 40. 19  |
| 19    |                      | 99. 41. 50  | 101. 6. 54  | 102. 32. 15 | 103. 57. 53 |
| 20    |                      | 111. 10. 37 | 112. 38. 10 | 114. 6. 3   | 115. 34. 17 |
| 18    | Aldeba-ran.          | 50. 39. 7   | 52. 9. 42   | 53. 40. 30  | 55. 11. 31  |
| 19    |                      | 62. 50. 13  | 64. 22. 43  | 65. 55. 30  | 67. 28. 35  |
| 20    |                      | 75. 18. 36  |             |             |             |
| 20    | Pollux.              | 33. 15. 17  | 34. 44. 25  | 36. 14. 16  | 37. 44. 49  |
| 21    |                      | 45. 27. 27  | 47. 1. 47   | 48. 36. 42  | 50. 12. 10  |
| 22    |                      | 58. 17. 33  |             |             |             |
| 22    | Regulus.             | 21. 25. 45  | 23. 6. 16   | 24. 47. 17  | 26. 28. 47  |
| 23    |                      | 35. 3. 15   | 36. 47. 30  | 38. 32. 11  | 40. 17. 17  |
| 24    |                      | 49. 8. 44   | 50. 56. 8   | 52. 43. 53  | 54. 31. 58  |
| 25    |                      | 63. 37. 13  | 65. 27. 7   | 67. 17. 15  | 69. 7. 37   |
| 26    | Spica $\alpha$       | 25. 7. 38   | 26. 57. 18  | 28. 47. 19  | 30. 37. 39  |
| 27    |                      | 39. 51. 58  | 41. 43. 7   | 43. 34. 18  | 45. 25. 30  |
| 28    |                      | 54. 41. 1   | 56. 31. 51  | 58. 22. 35  | 60. 13. 11  |
| 29    |                      | 69. 23. 42  |             |             |             |
| 29    | Antares.             | 25. 4. 15   | 26. 46. 10  | 28. 28. 38  | 30. 11. 34  |
| 30    |                      | 38. 50. 45  | 40. 34. 57  | 42. 19. 3   | 44. 3. 9    |

JUPITER's Satellites will not be visible this Month,  
JUPITER being too near the Sun.



| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.        | Phases of the Moon.                   |            |
|--------------------|-------------------|-------------------------------|---------------------------------------|------------|
|                    |                   |                               | D. H. M.                              |            |
|                    |                   |                               | Last Quarter—                         | 2. 11. 58  |
|                    |                   |                               | New Moon—                             | 10. 3. 16  |
|                    |                   |                               | First Quarter—                        | 18. 6. 58  |
|                    |                   |                               | Full Moon—                            | 25. 5. 22  |
|                    |                   |                               | Last Quarter—                         | 31. 20. 23 |
|                    |                   |                               | D. Other Phenomena.                   |            |
|                    |                   |                               | 1. ☾ 15 <sup>h</sup> . 50'.           |            |
|                    |                   |                               | 3. ☽ 19 <sup>h</sup> . 8'.            |            |
|                    |                   |                               | 7. ☾ Im. 19 <sup>h</sup> . 38'. Em.   |            |
|                    |                   |                               | 20 <sup>h</sup> . 13'. ☽ passes       |            |
|                    |                   |                               | 13' N. of ♀'s cent.                   |            |
|                    |                   |                               | 11. ☾ 4 <sup>h</sup> . 38'.           |            |
|                    |                   |                               | ☾ 1 ad ♀ 6 <sup>h</sup> . 46'.        |            |
|                    |                   |                               | ☾ 2 ad ♀ 7 <sup>h</sup> . 17'.        |            |
|                    |                   |                               | ☾ 12 <sup>h</sup> . 38'.              |            |
|                    |                   |                               | 17. ☾ 12 <sup>h</sup> . 59'.          |            |
|                    |                   |                               | ☾ 18 <sup>h</sup> . 3'.               |            |
|                    |                   |                               | 19. ☾ 21 <sup>h</sup> . 38'.          |            |
|                    |                   |                               | 20. ☾ 7 <sup>h</sup> . 49'.           |            |
|                    |                   |                               | ☾ enters ♀ at 14 <sup>h</sup> . 12'.  |            |
|                    |                   |                               | ☾ 21 <sup>h</sup> . 39'.              |            |
|                    |                   |                               | ☾ Stationary.                         |            |
|                    |                   |                               | 21. ☾ 20 <sup>h</sup> . 59'.          |            |
|                    |                   |                               | 23. ☾ 0 <sup>h</sup> . 17'.           |            |
|                    |                   |                               | 24. ☾ 9 <sup>h</sup> . 39'.           |            |
|                    |                   |                               | ☾ 13 <sup>h</sup> . 13'.              |            |
|                    |                   |                               | ☾ 16 <sup>h</sup> . 11'.              |            |
|                    |                   |                               | 25. ☾ Serpentar. 7 <sup>h</sup> . 4'. |            |
|                    |                   |                               | 28. ☾ 23 <sup>h</sup> . 22'.          |            |
|                    |                   |                               | 31. ☾ 1 <sup>h</sup> . 17'.           |            |
| 1                  | Su.               | 4th Su. after East. St. Phil. |                                       |            |
| 2                  | M.                | From East. in 1 mon. 3 r.     |                                       |            |
| 3                  | Tu.               | Invention of the Crofs.       |                                       |            |
| 4                  | W.                |                               |                                       |            |
| 5                  | Th.               |                               |                                       |            |
| 6                  | F.                | John Evan. ante P. Lat.       |                                       |            |
| 7                  | Sa.               |                               |                                       |            |
| 8                  | Su.               | 5th Su. after East. Rogat.    |                                       |            |
| 9                  | M.                | From East. in 5 weeks.        |                                       |            |
| 10                 | Tu.               | [4 ret.                       |                                       |            |
| 11                 | W.                |                               |                                       |            |
| 12                 | Th.               | Ascension-day. Holy Th.       |                                       |            |
| 13                 | F.                | Morrow of Asc. 5 ret.         |                                       |            |
| 14                 | Sa.               |                               |                                       |            |
| 15                 | Su.               | Sunday after Ascension-day.   |                                       |            |
| 16                 | M.                | Term ends.                    |                                       |            |
| 17                 | Tu.               |                               |                                       |            |
| 18                 | W.                |                               |                                       |            |
| 19                 | Th.               | 2. Charlotte born, 1744.      |                                       |            |
| 20                 | F.                | [Dunst. Oxf. T. ends.         |                                       |            |
| 21                 | Sa.               |                               |                                       |            |
| 22                 | Su.               | Whit-Sunday.                  |                                       |            |
| 23                 | M.                | Whit-Monday. Cam. Ter.        |                                       |            |
| 24                 | Tu.               | Whit-Tuesf. [divides mid.     |                                       |            |
| 25                 | W.                |                               |                                       |            |
| 26                 | Th.               | Augustin, 1st Abp. Cant.      |                                       |            |
| 27                 | F.                | Ven. Bede.                    |                                       |            |
| 28                 | Sa.               |                               |                                       |            |
| 29                 | Su.               | Trinity-Su. K. Ch. II. rest.  |                                       |            |
| 30                 | M.                | On mor. of H. Tr. 1 ret.      |                                       |            |
| 31                 | Tu.               |                               |                                       |            |

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time Sub. | Diff. |
|--------------------|-------------------|------------------|---------------------------|----------------------|---------------------|-------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.               | S.    |
| 1                  | Su.               | 1. 11. 6. 11     | 2. 34. 40, 9              | 15. 10. 34           | 3. 10, 0            | 7, 4  |
| 2                  | M.                | 1. 12. 4. 16     | 2. 38. 30, 0              | 15. 28. 30           | 3. 17, 4            | 6, 8  |
| 3                  | Tu.               | 1. 13. 2. 20     | 2. 42. 19, 7              | 15. 46. 11           | 3. 24, 2            | 6, 2  |
| 4                  | W.                | 1. 14. 0. 23     | 2. 46. 10, 0              | 16. 3. 37            | 3. 30, 4            | 5, 7  |
| 5                  | Th.               | 1. 14. 58. 25    | 2. 50. 0, 9               | 16. 20. 47           | 3. 36, 1            | 5, 1  |
| 6                  | F.                | 1. 15. 56. 25    | 2. 53. 52, 4              | 16. 37. 41           | 3. 41, 2            | 4, 5  |
| 7                  | Sa.               | 1. 16. 54. 24    | 2. 57. 44, 4              | 16. 54. 18           | 3. 45, 7            | 3, 8  |
| 8                  | Su.               | 1. 17. 52. 22    | 3. 1. 37, 1               | 17. 10. 39           | 3. 49, 5            | 3, 3  |
| 9                  | M.                | 1. 18. 50. 18    | 3. 5. 30, 3               | 17. 26. 42           | 3. 52, 8            | 2, 8  |
| 10                 | Tu.               | 1. 19. 48. 13    | 3. 9. 24, 2               | 17. 42. 28           | 3. 55, 6            | 2, 1  |
| 11                 | W.                | 1. 20. 46. 6     | 3. 13. 18, 6              | 17. 57. 57           | 3. 57, 7            | 1, 6  |
| 12                 | Th.               | 1. 21. 43. 58    | 3. 17. 13, 6              | 18. 13. 7            | 3. 59, 3            | 1, 0  |
| 13                 | F.                | 1. 22. 41. 48    | 3. 21. 9, 1               | 18. 27. 59           | 4. 0, 3             | 0, 4  |
| 14                 | Sa.               | 1. 23. 39. 37    | 3. 25. 5, 2               | 18. 42. 32           | 4. 0, 7             | 0, 1  |
| 15                 | Su.               | 1. 24. 37. 24    | 3. 29. 1, 9               | 18. 56. 47           | 4. 0, 6             | 0, 7  |
| 16                 | M.                | 1. 25. 35. 9     | 3. 32. 59, 1              | 19. 10. 42           | 3. 59, 9            | 1, 2  |
| 17                 | Tu.               | 1. 26. 32. 53    | 3. 36. 56, 8              | 19. 24. 17           | 3. 58, 7            | 1, 7  |
| 18                 | W.                | 1. 27. 30. 35    | 3. 40. 55, 2              | 19. 37. 33           | 3. 57, 0            | 2, 3  |
| 19                 | Th.               | 1. 28. 28. 16    | 3. 44. 54, 0              | 19. 50. 29           | 3. 54, 7            | 2, 8  |
| 20                 | F.                | 1. 29. 25. 54    | 3. 48. 53, 4              | 20. 3. 5             | 3. 51, 9            | 3, 3  |
| 21                 | Sa.               | 2. 0. 23. 31     | 3. 52. 53, 3              | 20. 15. 20           | 3. 48, 6            | 3, 9  |
| 22                 | Su.               | 2. 1. 21. 7      | 3. 56. 53, 7              | 20. 27. 15           | 3. 44, 7            | 4, 4  |
| 23                 | M.                | 2. 2. 18. 42     | 4. 0. 54, 7               | 20. 38. 48           | 3. 40, 3            | 4, 9  |
| 24                 | Tu.               | 2. 3. 16. 15     | 4. 4. 56, 1               | 20. 50. 1            | 3. 35, 4            | 5, 3  |
| 25                 | W.                | 2. 4. 13. 47     | 4. 8. 58, 0               | 21. 0. 52            | 3. 30, 1            | 5, 9  |
| 26                 | Th.               | 2. 5. 11. 17     | 4. 13. 0, 5               | 21. 11. 21           | 3. 24, 2            | 6, 4  |
| 27                 | F.                | 2. 6. 8. 47      | 4. 17. 3, 4               | 21. 21. 28           | 3. 17, 8            | 6, 8  |
| 28                 | Sa.               | 2. 7. 6. 16      | 4. 21. 6, 9               | 21. 31. 13           | 3. 11, 0            | 7, 4  |
| 29                 | Su.               | 2. 8. 3. 44      | 4. 25. 10, 8              | 21. 40. 36           | 3. 3, 6             | 7, 8  |
| 30                 | M.                | 2. 9. 1. 11      | 4. 29. 15, 1              | 21. 49. 37           | 2. 55, 8            | 8, 2  |
| 31                 | Tu.               | 2. 9. 58. 38     | 4. 33. 20, 0              | 21. 58. 15           | 2. 47, 6            |       |

M A Y 1774.

[51]

| Days of the Month. | Semidiameter of the Sun. | Time of D <sup>o</sup> passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|--------------------|--------------------------|----------------------------------------------|---------------------------|----------------------------------|---------------------------|
|                    | M. S.                    | M. S.                                        | M. S.                     |                                  | S. D. M.                  |
| 1                  | 15. 54, 5                | 1. 5, 9                                      | 2. 25, 3                  | 0. 003766                        | 5. 19. 42                 |
| 7                  | 15. 53, 2                | 1. 6, 4                                      | 2. 24, 9                  | 0. 004395                        | 5. 19. 23                 |
| 14                 | 15. 52, 0                | 1. 6, 9                                      | 2. 24, 6                  | 0. 004961                        | 5. 19. 4                  |
| 19                 | 15. 50, 8                | 1. 7, 4                                      | 2. 24, 2                  | 0. 005453                        | 5. 18. 45                 |
| 25                 | 15. 49, 8                | 1. 7, 8                                      | 2. 23, 9                  | 0. 005895                        | 5. 18. 26                 |

## Eclipses of the SATELLITES of J U P I T E R.

| I. Satellite. Immersions. |            | II. Satellite. Immersions. |           | III. Satellite.      |                 |
|---------------------------|------------|----------------------------|-----------|----------------------|-----------------|
| Days                      | H. M. S.   | Days                       | H. M. S.  | Days                 | H. M. S.        |
| 16                        | 20. 7. 3   | 18                         | 0. 10. 36 | 15                   | 1. 12. 17 I     |
| 18                        | 14. 35. 41 | 21                         | 13. 28. 7 | 15                   | 3. 2. 3 E       |
| 20                        | 9. 4. 12   | 25                         | 2. 45. 33 | 22                   | 5. 13. 35 I     |
| 22                        | 3. 32. 47  | 28                         | 16. 2. 55 | 22                   | 7. 2. 16 E      |
| 23                        | 22. 1. 15  |                            |           | 29                   | 9. 14. 25 I     |
| 25                        | 16. 29. 47 |                            |           | 29                   | 11. 1. 58 E     |
| 27                        | 10. 58. 12 |                            |           | IV. Satellite. Conj. |                 |
| 29                        | 5. 26. 38  |                            |           | 20                   | 16. 39. 11 Inf. |
| 30                        | 23. 54. 57 |                            |           | 29                   | 1. 45. 51 Sup.  |



| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric Lati-<br>tude. | Declina-<br>tion. | Passage<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|---------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                     |

M E R C U R Y. Gr. Elong. 9<sup>d</sup>.

|    |            |         |          |         |         |        |
|----|------------|---------|----------|---------|---------|--------|
| 1  | 8. 19. 12  | 3. 51 S | 0. 17. 2 | 2. 33 S | 4. 21 N | 22. 31 |
| 7  | 9. 5. 59   | 5. 23   | 0. 21. 5 | 3. 6    | 5. 22   | 22. 25 |
| 13 | 9. 23. 52  | 6. 29   | 0. 27. 9 | 3. 12   | 7. 29   | 22. 3  |
| 19 | 10. 13. 45 | 6. 59   | 1. 4. 53 | 2. 54   | 10. 26  | 22. 31 |
| 25 | 11. 6. 45  | 6. 32   | 1. 14. 6 | 2. 16   | 13. 55  | 22. 43 |

## V E N U S.

|    |           |         |           |         |         |        |
|----|-----------|---------|-----------|---------|---------|--------|
| 1  | 8. 5. 31  | 0. 32 N | 0. 0. 20  | 0. 50 N | 0. 54 N | 21. 24 |
| 7  | 8. 15. 3  | 0. 2 S  | 0. 4. 5   | 0. 5    | 1. 35   | 21. 16 |
| 13 | 8. 24. 33 | 0. 35   | 0. 8. 27  | 0. 46   | 2. 39   | 21. 10 |
| 19 | 9. 4. 3   | 1. 8    | 0. 13. 19 | 1. 22   | 4. 0    | 21. 6  |
| 25 | 9. 13. 32 | 1. 38   | 0. 18. 2  | 1. 51   | 5. 35   | 21. 2  |

## M A R S.

|    |           |         |           |         |        |        |
|----|-----------|---------|-----------|---------|--------|--------|
| 1  | 0. 4. 52  | 1. 16 S | 0. 19. 56 | 0. 47 S | 7. 6 N | 22. 39 |
| 7  | 0. 8. 34  | 1. 11   | 0. 24. 29 | 0. 44   | 8. 49  | 22. 33 |
| 13 | 0. 12. 14 | 1. 6    | 0. 28. 59 | 0. 40   | 10. 30 | 22. 27 |
| 19 | 0. 15. 52 | 0. 9    | 1. 3. 28  | 0. 37   | 12. 6  | 22. 20 |
| 25 | 0. 19. 29 | 0. 53   | 1. 7. 55  | 0. 34   | 13. 38 | 22. 13 |

## J U P I T E R.

|    |           |         |           |        |         |        |
|----|-----------|---------|-----------|--------|---------|--------|
| 1  | 0. 24. 7  | 1. 16 S | 0. 26. 58 | 1. 4 S | 9. 24 N | 23. 4  |
| 7  | 0. 24. 39 | 1. 16   | 0. 28. 22 | 1. 4   | 9. 55   | 22. 46 |
| 13 | 0. 25. 12 | 1. 16   | 0. 29. 46 | 1. 4   | 10. 24  | 22. 28 |
| 19 | 0. 25. 45 | 1. 16   | 1. 1. 8   | 1. 4   | 10. 53  | 22. 9  |
| 25 | 0. 26. 18 | 1. 15   | 1. 2. 29  | 1. 5   | 11. 20  | 21. 50 |

## S A T U R N.

|    |           |         |           |         |         |       |
|----|-----------|---------|-----------|---------|---------|-------|
| 1  | 5. 24. 29 | 2. 14 N | 5. 19. 42 | 2. 24 N | 6. 17 N | 8. 50 |
| 7  | 5. 24. 41 | 2. 14   | 5. 19. 31 | 2. 23   | 6. 21   | 8. 26 |
| 13 | 5. 24. 53 | 2. 14   | 5. 19. 24 | 2. 22   | 6. 23   | 8. 2  |
| 19 | 5. 25. 6  | 2. 15   | 5. 19. 21 | 2. 21   | 6. 23   | 7. 39 |
| 25 | 5. 25. 18 | 2. 15   | 5. 19. 22 | 2. 20   | 6. 22   | 7. 15 |

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[53]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D.M.S.                   |
| 1                  | Sa.               | 9. 21. 33. 55             | 9. 28. 39. 23                 | 4. 25. 6 N               | 4. 3. 45 N               |
| 2                  | M.                | 10. 5. 39. 39             | 10. 12. 34. 32                | 3. 33. 58                | 3. 11. 18                |
| 3                  | Tu.               | 10. 19. 24. 20            | 10. 26. 9. 0                  | 2. 41. 12                | 2. 9. 13                 |
| 4                  | W.                | 11. 2. 48. 52             | 11. 9. 24. 15                 | 1. 35. 51                | 1. 1. 37 N               |
| 5                  | Th.               | 11. 15. 55. 20            | 11. 22. 22. 29                | 0. 26. 56 N              | 0. 7. 43 S               |
| 6                  | F.                | 11. 28. 46. 6             | 0. 5. 6. 27                   | 0. 41. 54 S              | 1. 15. 13                |
| 7                  | Sa.               | 0. 11. 23. 43             | 0. 17. 38. 17                 | 1. 47. 22                | 2. 17. 52                |
| 8                  | Sa.               | 0. 23. 50. 21             | 1. 0. 0. 4                    | 2. 46. 34                | 3. 13. 1                 |
| 9                  | M.                | 1. 6. 7. 44               | 1. 12. 13. 23                 | 3. 37. 5                 | 3. 58. 27                |
| 10                 | Tu.               | 1. 18. 17. 17             | 1. 24. 19. 28                 | 4. 17. 2                 | 4. 32. 36                |
| 11                 | W.                | 2. 0. 20. 9               | 2. 6. 19. 30                  | 4. 45. 1                 | 4. 54. 14                |
| 12                 | Th.               | 2. 12. 17. 36             | 2. 18. 14. 41                 | 5. 0. 13                 | 5. 2. 52                 |
| 13                 | F.                | 2. 24. 11. 2              | 3. 0. 6. 51                   | 5. 2. 14                 | 4. 58. 22                |
| 14                 | Sa.               | 3. 6. 2. 24               | 3. 11. 58. 5                  | 4. 51. 14                | 4. 41. 0                 |
| 15                 | Sa.               | 3. 17. 54. 19             | 3. 23. 51. 30                 | 4. 27. 40                | 4. 11. 25                |
| 16                 | M.                | 3. 29. 50. 4              | 4. 5. 50. 34                  | 3. 52. 18                | 3. 30. 30                |
| 17                 | Tu.               | 4. 11. 53. 44             | 4. 17. 59. 56                 | 3. 6. 13                 | 2. 39. 35                |
| 18                 | W.                | 4. 24. 9. 49              | 5. 0. 24. 5                   | 2. 10. 47                | 1. 40. 6                 |
| 19                 | Th.               | 5. 6. 43. 14              | 5. 13. 7. 58                  | 1. 7. 48 S               | 0. 34. 9 S               |
| 20                 | F.                | 5. 19. 38. 40             | 5. 26. 16. 3                  | 0. 0. 25 N               | 0. 35. 33 N              |
| 21                 | Sa.               | 6. 3. 0. 18               | 6. 9. 51. 52                  | 1. 10. 48                | 1. 45. 34                |
| 22                 | Sa.               | 6. 16. 50. 48             | 6. 23. 57. 6                  | 2. 19. 25                | 2. 51. 40                |
| 23                 | M.                | 7. 1. 10. 27              | 7. 8. 30. 31                  | 3. 21. 38                | 3. 48. 48                |
| 24                 | Tu.               | 7. 15. 56. 30             | 7. 23. 27. 27                 | 4. 12. 19                | 4. 31. 46                |
| 25                 | W.                | 8. 1. 2. 14               | 8. 8. 39. 35                  | 4. 46. 35                | 4. 56. 23                |
| 26                 | Th.               | 8. 16. 18. 0              | 8. 23. 56. 4                  | 5. 0. 56                 | 5. 0. 7                  |
| 27                 | F.                | 9. 1. 32. 25              | 9. 9. 5. 41                   | 4. 53. 57                | 4. 42. 43                |
| 28                 | Sa.               | 9. 16. 34. 41             | 9. 23. 58. 37                 | 4. 26. 36                | 4. 6. 13                 |
| 29                 | Sa.               | 10. 1. 16. 38             | 10. 8. 28. 18                 | 3. 42. 2                 | 3. 14. 40                |
| 30                 | M.                | 10. 15. 33. 17            | 10. 22. 31. 33                | 2. 44. 36                | 2. 12. 20                |
| 31                 | Tu.               | 10. 29. 23. 12            | 11. 6. 8. 25                  | 1. 39. 1                 | 1. 4. 38                 |

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| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Ascen. at Midn. | D's Declinat. at Noon. | D's Declinat. at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                     | D. M.                  | D. M.                  |
| 1                  | Sa.               | 22       | 17. 35                  | 292. 35                   | 299. 55                   | 17. 22 S               | 16. 28 S               |
| 2                  | M.                | 23       | 18. 30                  | 307. 6                    | 314. 7                    | 15. 20                 | 13. 59                 |
| 3                  | Tu.               | 24       | 19. 21                  | 320. 58                   | 327. 39                   | 12. 28                 | 10. 47                 |
| 4                  | W.                | 25       | 20. 10                  | 334. 11                   | 340. 35                   | 8. 59                  | 7. 6                   |
| 5                  | Th.               | 26       | 20. 57                  | 346. 52                   | 353. 3                    | 5. 9                   | 3. 9 S                 |
| 6                  | F.                | 27       | 21. 43                  | 359. 9                    | 5. 11                     | 1. 8 S                 | 0. 53 N                |
| 7                  | Sa.               | 28       | 22. 28                  | 11. 11                    | 17. 8                     | 2. 52 N                | 4. 48                  |
| 8                  | Su.               | 29       | 23. 13                  | 23. 6                     | 29. 3                     | 6. 41                  | 8. 28                  |
| 9                  | M.                | 30       | 23. 59                  | 35. 1                     | 41. 1                     | 10. 10                 | 11. 44                 |
| 10                 | Tu.               | 1        | ♄                       | 47. 3                     | 53. 6                     | 13. 10                 | 14. 28                 |
| 11                 | W.                | 2        | 0. 45                   | 59. 12                    | 65. 20                    | 15. 36                 | 16. 33                 |
| 12                 | Th.               | 3        | 1. 32                   | 71. 30                    | 77. 41                    | 17. 20                 | 17. 55                 |
| 13                 | F.                | 4        | 2. 19                   | 83. 54                    | 90. 7                     | 18. 18                 | 18. 30                 |
| 14                 | Sa.               | 5        | 3. 6                    | 96. 21                    | 102. 34                   | 18. 29                 | 18. 16                 |
| 15                 | Su.               | 6        | 3. 53                   | 108. 47                   | 114. 59                   | 17. 51                 | 17. 14                 |
| 16                 | M.                | 7        | 4. 40                   | 121. 10                   | 127. 19                   | 16. 25                 | 15. 26                 |
| 17                 | Tu.               | 8        | 5. 27                   | 133. 28                   | 139. 36                   | 14. 16                 | 12. 55                 |
| 18                 | W.                | 9        | 6. 14                   | 145. 44                   | 151. 52                   | 11. 25                 | 9. 47                  |
| 19                 | Th.               | 10       | 7. 1                    | 158. 2                    | 164. 14                   | 8. 0                   | 6. 7                   |
| 20                 | F.                | 11       | 7. 48                   | 170. 29                   | 176. 49                   | 4. 7 N                 | 2. 2 N                 |
| 21                 | Sa.               | 12       | 8. 38                   | 183. 14                   | 189. 46                   | 0. 7 S                 | 2. 18 S                |
| 22                 | Su.               | 13       | 9. 29                   | 196. 25                   | 203. 14                   | 4. 29                  | 6. 39                  |
| 23                 | M.                | 14       | 10. 23                  | 210. 13                   | 217. 23                   | 8. 45                  | 10. 45                 |
| 24                 | Tu.               | 15       | 11. 21                  | 224. 43                   | 232. 14                   | 12. 36                 | 14. 16                 |
| 25                 | W.                | 16       | 12. 21                  | 239. 55                   | 247. 44                   | 15. 43                 | 16. 53                 |
| 26                 | Th.               | 17       | 13. 23                  | 255. 39                   | 263. 38                   | 17. 46                 | 18. 20                 |
| 27                 | F.                | 18       | 14. 25                  | 271. 37                   | 279. 34                   | 18. 34                 | 18. 27                 |
| 28                 | Sa.               | 19       | 15. 25                  | 287. 24                   | 295. 7                    | 18. 2                  | 17. 18                 |
| 29                 | Su.               | 20       | 16. 22                  | 302. 40                   | 310. 2                    | 16. 17                 | 15. 2                  |
| 30                 | M.                | 21       | 17. 16                  | 317. 11                   | 324. 9                    | 13. 34                 | 11. 56                 |
| 31                 | Tu.               | 22       | 18. 7                   | 330. 55                   | 337. 31                   | 10. 9                  | 8. 16                  |



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| Days of the Month. | Days of the Week. | Semidr.<br>D at Noon. | Semidr.<br>D at Midnight. | Hor. Par.<br>D at Noon. | Hor. Par.<br>D at Midnight. | Propor.<br>at Noon. | Propor.<br>at Mid. |
|--------------------|-------------------|-----------------------|---------------------------|-------------------------|-----------------------------|---------------------|--------------------|
|                    |                   | M. S.                 | M. S.                     | M. S.                   | M. S.                       | Lo.                 | Lo.                |
| 1                  | Sa.               | 16. 14                | 16. 9                     | 59. 35                  | 59. 15                      | 4861                | 4826               |
| 2                  | M.                | 16. 3                 | 15. 58                    | 58. 55                  | 58. 34                      | 4850                | 4876               |
| 3                  | Tu.               | 15. 52                | 15. 46                    | 58. 13                  | 57. 52                      | 4902                | 4928               |
| 4                  | W.                | 15. 41                | 15. 35                    | 57. 33                  | 57. 13                      | 4952                | 4977               |
| 5                  | Th.               | 15. 31                | 15. 26                    | 56. 55                  | 56. 36                      | 5000                | 5025               |
| 6                  | F.                | 15. 21                | 15. 16                    | 56. 20                  | 56. 3                       | 5045                | 5067               |
| 7                  | Sa.               | 15. 12                | 15. 8                     | 55. 48                  | 55. 34                      | 5086                | 5104               |
| 8                  | Su.               | 15. 5                 | 15. 1                     | 55. 21                  | 55. 8                       | 5122                | 5138               |
| 9                  | M.                | 14. 58                | 14. 55                    | 54. 57                  | 54. 46                      | 5153                | 5167               |
| 10                 | Tu.               | 14. 53                | 14. 51                    | 54. 37                  | 54. 29                      | 5179                | 5190               |
| 11                 | W.                | 14. 49                | 14. 47                    | 54. 22                  | 54. 16                      | 5199                | 5207               |
| 12                 | Th.               | 14. 46                | 14. 45                    | 54. 11                  | 54. 8                       | 5214                | 5218               |
| 13                 | F.                | 14. 45                | 14. 45                    | 54. 7                   | 54. 7                       | 5219                | 5219               |
| 14                 | Sa.               | 14. 45                | 14. 46                    | 54. 9                   | 54. 12                      | 5217                | 5213               |
| 15                 | Su.               | 14. 48                | 14. 50                    | 54. 18                  | 54. 27                      | 5205                | 5193               |
| 16                 | M.                | 14. 53                | 14. 56                    | 54. 37                  | 54. 50                      | 5179                | 5162               |
| 17                 | Tu.               | 15. 1                 | 15. 5                     | 55. 5                   | 55. 22                      | 5142                | 5120               |
| 18                 | W.                | 15. 11                | 15. 16                    | 55. 42                  | 56. 4                       | 5094                | 5065               |
| 19                 | Th.               | 15. 23                | 15. 30                    | 56. 28                  | 56. 54                      | 5035                | 5002               |
| 20                 | F.                | 15. 38                | 15. 46                    | 57. 21                  | 57. 50                      | 4967                | 4931               |
| 21                 | Sa.               | 15. 53                | 16. 1                     | 58. 18                  | 58. 48                      | 4896                | 4859               |
| 22                 | Su.               | 16. 9                 | 16. 17                    | 59. 16                  | 59. 44                      | 4824                | 4790               |
| 23                 | M.                | 16. 23                | 16. 29                    | 60. 9                   | 60. 32                      | 4760                | 4733               |
| 24                 | Tu.               | 16. 35                | 16. 39                    | 60. 51                  | 61. 6                       | 4710                | 4692               |
| 25                 | W.                | 16. 42                | 16. 44                    | 61. 17                  | 61. 24                      | 4679                | 4671               |
| 26                 | Th.               | 16. 44                | 16. 43                    | 61. 25                  | 61. 22                      | 4670                | 4673               |
| 27                 | F.                | 16. 41                | 16. 37                    | 61. 13                  | 61. 1                       | 4684                | 4698               |
| 28                 | Sa.               | 16. 33                | 16. 28                    | 60. 45                  | 60. 25                      | 4717                | 4741               |
| 29                 | Su.               | 16. 22                | 16. 15                    | 60. 3                   | 59. 39                      | 4768                | 4797               |
| 30                 | M.                | 16. 8                 | 16. 1                     | 59. 14                  | 58. 47                      | 4827                | 4860               |
| 31                 | Tu.               | 15. 54                | 15. 47                    | 58. 21                  | 57. 55                      | 4892                | 4924               |

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M A Y 1774.

Distances of  $\gamma$ 's Centre from Stars, and from  $\odot$  east of her.

| Days. | Stars Names.             | Noon.<br>D. M. S. | 3 Hours.<br>D. M. S. | 6 Hours.<br>D. M. S. | 9 Hours.<br>D. M. S. |
|-------|--------------------------|-------------------|----------------------|----------------------|----------------------|
| 1     | $\alpha$ Pegasi.         | 59. 7. 48         | 57. 29. 28           | 55. 51. 47           | 54. 14. 44           |
| 2     |                          | 46. 20. 7         | 44. 47. 44           | 43. 16. 18           | 41. 45. 54           |
| 1     | The Sun.                 | 109. 28. 38       | 107. 49. 29          | 106. 10. 39          | 104. 32. 7           |
| 2     |                          | 96. 23. 51        | 94. 47. 7            | 93. 10. 42           | 91. 34. 35           |
| 3     |                          | 83. 38. 25        | 82. 4. 6             | 80. 30. 5            | 78. 56. 21           |
| 4     |                          | 71. 11. 58        | 69. 39. 55           | 68. 8. 9             | 66. 36. 39           |
| 5     |                          | 59. 3. 9          | 57. 33. 14           | 56. 3. 34            | 54. 34. 8            |
| 6     |                          | 47. 10. 33        | 45. 42. 32           | 44. 14. 45           | 42. 47. 12           |
| 12    | Regulus.                 | 74. 30. 13        | 73. 1. 18            | 71. 32. 26           | 70. 3. 37            |
| 13    |                          | 62. 40. 17        | 61. 11. 44           | 59. 43. 12           | 58. 14. 42           |
| 14    |                          | 50. 52. 25        | 49. 23. 57           | 47. 55. 28           | 46. 26. 57           |
| 15    |                          | 39. 3. 46         | 37. 34. 58           | 36. 6. 6             | 34. 37. 10           |
| 16    |                          | 27. 11. 15        | 25. 41. 47           | 24. 12. 13           | 22. 42. 33           |
| 17    | Spica $\alpha$           | 15. 12. 51        |                      |                      |                      |
| 17    |                          | 68. 43. 53        | 67. 12. 54           | 65. 41. 43           | 64. 10. 17           |
| 18    |                          | 56. 29. 37        | 54. 56. 41           | 53. 23. 29           | 51. 49. 59           |
| 19    |                          | 43. 58. 9         | 42. 22. 50           | 40. 47. 12           | 39. 11. 15           |
| 20    |                          | 31. 6. 53         | 29. 29. 4            | 27. 51. 0            | 26. 12. 39           |
| 21    | Antares.                 | 17. 58. 51        |                      |                      |                      |
| 21    |                          | 63. 48. 46        | 62. 8. 0             | 60. 26. 50           | 58. 45. 16           |
| 22    |                          | 50. 12. 12        | 48. 28. 34           | 46. 44. 41           | 45. 0. 34            |
| 23    | $\alpha$ Aquilæ.         | 36. 17. 5         | 34. 32. 11           | 32. 47. 21           | 31. 2. 37            |
| 24    |                          | 72. 49. 46        | 71. 9. 39            | 69. 29. 34           | 67. 49. 34           |
| 25    |                          | 59. 32. 23        | 57. 53. 57           | 56. 16. 2            | 54. 38. 41           |
| 26    | $\beta$ Capri-<br>corni. | 46. 44. 14        |                      |                      |                      |
| 26    |                          | 44. 26. 8         | 42. 32. 0            | 40. 37. 54           | 38. 43. 52           |
| 27    |                          | 29. 15. 26        | 27. 22. 13           | 25. 29. 13           | 23. 36. 27           |
| 28    | $\alpha$ Pegasi.         | 14. 16. 39        |                      |                      |                      |
| 28    |                          | 63. 48. 19        | 62. 5. 10            | 60. 22. 33           | 58. 40. 31           |
| 29    |                          | 50. 20. 56        | 48. 43. 25           | 47. 6. 50            | 45. 31. 14           |
| 30    | $\alpha$ Arietis.        | 37. 51. 5         | 36. 23. 20           | 34. 57. 18           | 33. 33. 9            |
| 31    |                          | 65. 12. 49        | 63. 34. 7            | 61. 55. 54           | 60. 18. 10           |
| J. 1  |                          | 52. 16. 57        |                      |                      |                      |
| 30    | The Sun.                 | 113. 26. 11       | 111. 48. 27          | 110. 11. 7           | 108. 34. 9           |
| 31    |                          | 100. 35. 10       | 99. 0. 32            | 97. 26. 17           | 95. 52. 24           |
| J. 1  |                          | 88. 8. 31         |                      |                      |                      |

M A Y 1774.

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Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  east of her.

| Days.                      | Stars Names.             | 12 Hours.                                                                       | 15 Hours.                                                                        | 18 Hours.                                                        | 21 Hours.                                                         |
|----------------------------|--------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
|                            |                          | D. M. S.                                                                        | D. M. S.                                                                         | D. M. S.                                                         | D. M. S.                                                          |
| 1<br>2                     | $\alpha$ Pegasi.         | 52. 38. 19<br>40. 16. 35                                                        | 51. 2. 33                                                                        | 49. 27. 36                                                       | 47. 53. 27                                                        |
| 1<br>2<br>3<br>4<br>5<br>6 | The Sun.                 | 102. 53. 52<br>89. 58. 46<br>77. 22. 55<br>65. 5. 25<br>53. 4. 57<br>41. 19. 54 | 101. 15. 55<br>88. 23. 14<br>75. 49. 45<br>63. 34. 28<br>51. 36. 0<br>39. 52. 49 | 99. 38. 15<br>86. 48. 0<br>74. 16. 53<br>62. 3. 46<br>50. 7. 17  | 95. 0. 54<br>85. 13. 3<br>72. 44. 17<br>60. 33. 20<br>48. 38. 48  |
| 12<br>13<br>14<br>15<br>16 | Regulus.                 | 68. 34. 52<br>56. 46. 14<br>44. 58. 24<br>33. 8. 10<br>21. 12. 47               | 67. 6. 9<br>55. 17. 47<br>43. 29. 49<br>31. 39. 4<br>19. 42. 54                  | 65. 37. 29<br>53. 49. 19<br>42. 1. 11<br>30. 9. 53<br>18. 12. 56 | 64. 8. 52<br>52. 20. 52<br>40. 32. 30<br>28. 40. 37<br>16. 42. 55 |
| 17<br>18<br>19<br>20       | Spica $\alpha$           | 62. 38. 39<br>50. 16. 13<br>37. 35. 0<br>24. 34. 5                              | 61. 6. 46<br>48. 42. 9<br>35. 58. 25<br>22. 55. 21                               | 59. 34. 39<br>47. 7. 47<br>34. 21. 33<br>21. 16. 32              | 58. 2. 15<br>45. 33. 7<br>32. 44. 22<br>19. 37. 41                |
| 21<br>22<br>23             | Antares.                 | 57. 3. 21<br>43. 16. 11<br>29. 18. 0                                            | 55. 21. 3<br>41. 31. 36                                                          | 53. 38. 26<br>39. 46. 52                                         | 51. 55. 29<br>38. 2. 0                                            |
| 23<br>24<br>25             | $\alpha$ Aquilæ.         | 79. 29. 28<br>66. 9. 40<br>53. 2. 1                                             | 77. 49. 45<br>64. 29. 57<br>51. 26. 10                                           | 76. 9. 52<br>62. 50. 27<br>49. 51. 11                            | 74. 29. 51<br>61. 11. 14<br>48. 17. 11                            |
| 26<br>27                   | $\beta$ Capri-<br>corni. | 36. 49. 56<br>21. 43. 55                                                        | 34. 56. 5<br>19. 51. 40                                                          | 33. 2. 23<br>17. 59. 41                                          | 31. 8. 50<br>16. 8. 0                                             |
| 28<br>29<br>30             | $\alpha$ Pegasi.         | 56. 59. 9<br>43. 56. 43<br>32. 11. 2                                            | 55. 18. 26<br>42. 23. 21                                                         | 53. 38. 29<br>40. 51. 13                                         | 51. 59. 19<br>39. 20. 26                                          |
| 30<br>31                   | $\alpha$ Arietis.        | 71. 52. 16<br>58. 40. 55                                                        | 70. 11. 43<br>57. 4. 10                                                          | 68. 31. 37<br>55. 27. 55                                         | 66. 51. 59<br>53. 52. 11                                          |
| 29<br>30<br>31             | The Sun.                 | 120. 0. 58<br>106. 57. 35<br>94. 18. 54                                         | 118. 21. 41<br>105. 21. 24<br>92. 45. 46                                         | 116. 42. 48<br>103. 45. 36<br>91. 12. 59                         | 115. 4. 18<br>102. 10. 11<br>89. 40. 34                           |



[8]

MAY 1774.

Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  west of her.

| Days | Stars Names.     | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|------|------------------|-------------|-------------|-------------|-------------|
|      |                  | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1    | Antares.         | 45. 47. 9   | 47. 31. 2   | 49. 14. 45  | 50. 58. 19  |
| 2    |                  | 57. 33. 19  | 61. 15. 38  | 62. 57. 43  | 64. 39. 34  |
| 3    |                  | 73. 5. 6    |             |             |             |
| 3    | Capri-<br>corni. | 18. 34. 14  | 20. 16. 0   | 21. 57. 20  | 23. 38. 41  |
| 4    |                  | 32. 0. 31   | 33. 40. 4   | 35. 19. 22  | 36. 58. 24  |
| 5    |                  | 45. 9. 43   | 46. 47. 14  | 48. 24. 30  | 50. 1. 33   |
| 6    | Aquila.          | 64. 40. 54  | 66. 5. 28   | 67. 30. 7   | 68. 54. 49  |
| 7    |                  | 75. 58. 24  | 77. 23. 3   | 78. 47. 37  | 80. 12. 9   |
| 8    |                  | 87. 13. 26  | 88. 37. 21  | 90. 1. 7    |             |
| 14   | The Sun.         | 42. 36. 16  | 43. 57. 6   | 45. 18. 0   | 46. 38. 57  |
| 15   |                  | 53. 24. 41  | 54. 46. 4   | 56. 7. 32   | 57. 29. 6   |
| 16   |                  | 64. 18. 42  | 65. 41. 0   | 67. 3. 29   | 68. 26. 7   |
| 17   |                  | 75. 22. 10  | 76. 45. 59  | 78. 10. 1   | 79. 34. 17  |
| 18   |                  | 86. 39. 23  | 88. 5. 14   | 89. 31. 23  | 90. 57. 50  |
| 19   |                  | 98. 14. 53  | 99. 43. 20  | 101. 12. 8  | 102. 41. 19 |
| 20   |                  | 110. 12. 45 | 111. 44. 15 | 112. 16. 10 | 114. 48. 30 |
| 18   | Pollux.          | 35. 7. 55   | 36. 36. 11  | 38. 5. 4    | 39. 34. 33  |
| 19   |                  | 47. 10. 20  | 48. 43. 6   | 50. 16. 20  | 51. 50. 5   |
| 20   | Regulus.         | 22. 57. 14  | 24. 35. 48  | 26. 14. 51  | 27. 54. 22  |
| 21   |                  | 36. 18. 50  | 38. 1. 8    | 39. 43. 54  | 41. 27. 8   |
| 22   |                  | 50. 10. 9   | 51. 56. 7   | 53. 42. 32  | 55. 29. 22  |
| 23   |                  | 64. 29. 54  |             |             |             |
| 23   | Spica $\alpha$   | 11. 46. 49  | 13. 28. 33  | 15. 12. 14  | 16. 57. 34  |
| 24   |                  | 25. 59. 13  | 27. 49. 33  | 29. 40. 21  | 31. 31. 33  |
| 25   |                  | 40. 52. 29  | 42. 45. 26  | 44. 38. 32  | 46. 31. 48  |
| 26   |                  | 55. 59. 29  | 57. 53. 7   | 59. 46. 42  | 61. 40. 16  |
| 27   |                  | 71. 6. 40   |             |             |             |
| 27   | Antares.         | 27. 37. 18  | 28. 23. 15  | 30. 9. 44   | 31. 56. 40  |
| 28   |                  | 40. 54. 59  | 42. 42. 6   | 44. 30. 32  | 46. 18. 11  |
| 29   |                  | 55. 13. 26  | 56. 59. 57  | 58. 46. 1   | 60. 31. 48  |
| 30   |                  | 69. 15. 44  |             |             |             |
| 30   | Capri-<br>corni. | 14. 44. 35  | 16. 29. 48  | 18. 14. 39  | 19. 59. 6   |
| 31   |                  | 28. 35. 39  | 30. 17. 48  | 31. 59. 35  | 33. 41. 0   |
| J. 1 |                  | 42. 2. 31   |             |             |             |

Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  west of her.

| U<br>M | Stars<br>Names.          | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|--------|--------------------------|-------------|-------------|-------------|-------------|
|        |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1      | Antares.                 | 52. 41. 45  | 54. 24. 56  | 55. 7. 50   | 57. 50. 44  |
| 2      |                          | 66. 21. 10  | 68. 2. 31   | 69. 43. 38  | 71. 24. 29  |
| 3      | $\beta$ Capri-<br>corni. | 25. 19. 36  | 27. 0. 14   | 28. 40. 35  | 30. 20. 42  |
| 4      |                          | 38. 37. 11  | 40. 15. 42  | 41. 53. 57  | 43. 31. 57  |
| 5      |                          | 51. 38. 21  |             |             |             |
| 5      | $\alpha$ Aquilæ.         | 59. 5. 47   | 60. 27. 50  | 61. 52. 4   | 63. 16. 36  |
| 6      |                          | 70. 19. 33  | 71. 44. 17  | 73. 9. 0    | 74. 33. 43  |
| 7      |                          | 81. 37. 36  | 83. 0. 58   | 84. 25. 14  | 85. 49. 23  |
| 13     | The Sun.                 |             |             | 59. 54. 42  | 41. 15. 28  |
| 14     |                          | 47. 59. 57  | 49. 21. 1   | 50. 42. 10  | 52. 3. 23   |
| 15     |                          | 58. 50. 47  | 60. 12. 34  | 61. 34. 29  | 62. 56. 32  |
| 16     |                          | 69. 48. 56  | 71. 11. 56  | 72. 35. 9   | 73. 58. 33  |
| 17     |                          | 80. 58. 47  | 82. 23. 32  | 83. 48. 33  | 85. 13. 50  |
| 18     |                          | 92. 24. 36  | 93. 51. 40  | 95. 19. 4   | 96. 46. 48  |
| 19     |                          | 104. 10. 51 | 105. 40. 44 | 107. 11. 1  | 108. 41. 41 |
| 20     |                          | 116. 21. 14 | 117. 54. 23 | 119. 27. 57 | 121. 1. 56  |
| 18     | Pollux.                  | 41. 4. 37   | 42. 55. 14  | 44. 6. 24   | 45. 38. 6   |
| 19     |                          | 53. 2. 19   |             |             |             |
| 19     | Regulus.                 | 16. 28. 12  | 18. 4. 53   | 19. 41. 38  | 21. 19. 10  |
| 20     |                          | 29. 34. 20  | 31. 14. 46  | 32. 55. 39  | 34. 37. 0   |
| 21     |                          | 43. 10. 50  | 44. 54. 59  | 46. 39. 35  | 48. 24. 38  |
| 22     |                          | 57. 16. 39  | 59. 4. 21   | 60. 52. 27  | 62. 40. 59  |
| 23     | Spica $\alpha$           | 18. 44. 13  | 20. 31. 50  | 22. 20. 18  | 24. 9. 27   |
| 24     |                          | 33. 43. 7   | 35. 15. 2   | 37. 7. 16   | 38. 59. 45  |
| 25     |                          | 48. 25. 13  | 50. 18. 42  | 52. 12. 15  | 54. 5. 51   |
| 26     |                          | 63. 33. 46  | 65. 27. 10  | 67. 20. 28  | 69. 13. 39  |
| 27     | Antares.                 | 33. 43. 55  | 35. 31. 51  | 37. 19. 15  | 39. 7. 4    |
| 28     |                          | 48. 5. 41   | 49. 53. 0   | 51. 40. 5   | 53. 26. 57  |
| 29     |                          | 62. 17. 16  | 64. 2. 25   | 65. 47. 12  | 67. 31. 39  |
| 30     | $\beta$ Capri-<br>corni. | 21. 43. 11  | 23. 26. 52  | 25. 10. 11  | 26. 53. 6   |
| 31     |                          | 35. 22. 2   | 37. 2. 42   | 38. 43. 0   | 40. 22. 56  |

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M A Y 1774.

Configurations of the SATELLITES of J U P I T E R  
at  $\frac{1}{2}$  Hour past 3 o' th' Clock in the Morning.

JUPITER's Satellites will not be visible the Beginning  
of this Month, being too near the SUN.

|    |     |     |    |     |    |    |    |      |     |
|----|-----|-----|----|-----|----|----|----|------|-----|
| 16 | 4.  | .2  | 3. | .1  | ⊙  |    |    |      |     |
| 17 | .4  |     | 3. |     | ⊙  | 1. | .2 |      |     |
| 18 | .4  |     | .3 |     | .1 | ⊙  |    | 2.   |     |
| 19 | 1.0 | 3.0 | .4 |     | 2. | ⊙  |    |      |     |
| 20 |     |     | .4 |     | .2 | ⊙  | .1 | .3   |     |
| 21 |     |     |    | 1.  | .4 | ⊙  |    | .2   | 3.  |
| 22 | 2.0 |     |    |     |    | ⊙  | 5. | .1.2 |     |
| 23 |     |     | .2 | 1.  | 3. | ⊙  |    |      | .4  |
| 24 |     |     | 3. |     |    | ⊙  | .2 | 1.   | .4  |
| 25 |     |     | .7 |     | .1 | ⊙  |    | 2.   |     |
| 26 |     |     |    | .2. | .3 | ⊙  | 1. |      | .4. |
| 27 | 1.0 |     |    | .2  |    | ⊙  | .3 |      | 4.  |
| 28 |     |     |    | 1.  |    | ⊙  | .2 | 4.   | .3  |
| 29 |     |     |    |     |    | ⊙  | 2. | 4.   | 3.  |
| 30 |     |     |    | 2.  | 1. | 4. | 3. |      |     |
| 31 |     | 4   | 6  | 3   |    | ⊙  | .2 | 1.   |     |





[62]

JUNE 1774.

| Day of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time. Sub. | Dist. |
|-------------------|-------------------|------------------|---------------------------|----------------------|----------------------|-------|
|                   |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.                | S.    |
| 1                 | W.                | 2. 10. 56. 4     | 4. 37. 25, 2              | 22. 6. 31            | 2. 38, 9             | 9, 1  |
| 2                 | Th.               | 2. 11. 53. 29    | 4. 41. 30, 9              | 22. 14. 23           | 2. 29, 3             | 9, 5  |
| 3                 | F.                | 2. 12. 50. 4     | 4. 45. 3, 0               | 22. 21. 52           | 2. 20, 3             | 10, 0 |
| 4                 | Sa.               | 2. 13. 48. 19    | 4. 49. 43, 6              | 22. 28. 58           | 2. 10, 3             | 10, 3 |
| 5                 | Su.               | 2. 14. 45. 43    | 4. 53. 50, 5              | 22. 35. 40           | 2. 0, 0              | 10, 6 |
| 6                 | M.                | 2. 15. 43. 6     | 4. 57. 57, 7              | 22. 41. 59           | 1. 49, 4             | 11, 0 |
| 7                 | Tu.               | 2. 16. 40. 29    | 5. 2. 5, 2                | 22. 47. 53           | 1. 38, 4             | 11, 3 |
| 8                 | W.                | 2. 17. 37. 51    | 5. 6. 13, 1               | 22. 53. 24           | 1. 27, 1             | 11, 6 |
| 9                 | Th.               | 2. 18. 35. 13    | 5. 10. 21, 2              | 22. 58. 31           | 1. 15, 5             | 11, 8 |
| 10                | F.                | 2. 19. 32. 34    | 5. 14. 29, 6              | 23. 3. 13            | 1. 3, 7              | 12, 0 |
| 11                | Sa.               | 2. 20. 29. 54    | 5. 18. 38, 3              | 23. 7. 31            | 0. 51, 7             | 12, 2 |
| 12                | Su.               | 2. 21. 27. 13    | 5. 22. 47, 0              | 23. 11. 25           | 0. 39, 5             | 12, 4 |
| 13                | M.                | 2. 22. 24. 32    | 5. 26. 56, 0              | 23. 14. 54           | 0. 27, 1             | 12, 5 |
| 14                | Tu.               | 2. 23. 21. 49    | 5. 31. 5, 1               | 23. 17. 58           | 0. 14, 6             | 12, 6 |
| 15                | W.                | 2. 24. 19. 6     | 5. 35. 14, 4              | 23. 20. 38           | 0. 2, 0              | 12, 8 |
| 16                | Th.               | 2. 25. 16. 22    | 5. 39. 23, 7              | 23. 22. 53           | A 10, 8              | 12, 8 |
| 17                | F.                | 2. 26. 13. 37    | 5. 43. 33, 1              | 23. 24. 44           | 0. 23, 6             | 12, 9 |
| 18                | Sa.               | 2. 27. 10. 52    | 5. 47. 42, 6              | 23. 26. 10           | 0. 36, 5             | 12, 9 |
| 19                | Su.               | 2. 28. 8. 5      | 5. 51. 52, 0              | 23. 27. 11           | 0. 49, 4             | 12, 8 |
| 20                | M.                | 2. 29. 5. 18     | 5. 56. 1, 5               | 23. 27. 47           | 1. 2, 2              | 12, 9 |
| 21                | Tu.               | 3. 0. 2. 31      | 6. 0. 11, 0               | 23. 27. 58           | 1. 15, 1             | 12, 9 |
| 22                | W.                | 3. 0. 59. 43     | 6. 4. 20, 4               | 23. 27. 45           | 1. 28, 0             | 12, 7 |
| 23                | Th.               | 3. 1. 56. 54     | 6. 8. 29, 7               | 23. 27. 6            | 1. 40, 7             | 12, 7 |
| 24                | F.                | 3. 2. 54. 5      | 6. 12. 39, 0              | 23. 26. 3            | 1. 53, 4             | 12, 6 |
| 25                | Sa.               | 3. 3. 51. 16     | 6. 16. 48, 2              | 23. 24. 35           | 2. 6, 0              | 12, 5 |
| 26                | Su.               | 3. 4. 48. 27     | 6. 20. 57, 3              | 23. 22. 43           | 2. 18, 5             | 12, 4 |
| 27                | M.                | 3. 5. 45. 38     | 6. 25. 6, 2               | 23. 20. 26           | 2. 30, 9             | 12, 2 |
| 28                | Tu.               | 3. 6. 42. 49     | 6. 29. 15, 1              | 23. 17. 45           | 2. 43, 1             | 12, 1 |
| 29                | W.                | 3. 7. 40. 1      | 6. 33. 23, 7              | 23. 14. 38           | 2. 55, 2             | 11, 9 |
| 30                | Th.               | 3. 8. 37. 13     | 6. 37. 32, 2              | 23. 11. 8            | 3. 7, 1              |       |

J U N E 1774.

[63]

| Days | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|      | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1    | 15.48,8                          | 1. 8,3                                             | 2. 23,6                            | 0.006363                               | 5. 18. 4                        |
| 7    | 15.48,1                          | 1. 8,6                                             | 2. 23,3                            | 0.006696                               | 5. 17. 45                       |
| 13   | 15.47,5                          | 1. 8,7                                             | 2. 23,2                            | 0.006936                               | 5. 17. 26                       |
| 19   | 15.47,1                          | 1. 8,8                                             | 2. 23,0                            | 0.007093                               | 5. 17. 7                        |
| 25   | 15.46,9                          | 1. 8,8                                             | 2. 23,0                            | 0.007189                               | 5. 16. 48                       |

Eclipses of the SATELLITES of J U P I T E R.

| I. Satellite.<br>Immerfions. |            | II. Satellite.<br>Immerfions. |            | III. Satellite.      |                 |
|------------------------------|------------|-------------------------------|------------|----------------------|-----------------|
| Days                         | H. M. S.   | Days                          | H. M. S.   | Days                 | H. M. S.        |
| 1                            | 18. 23. 23 | 1                             | 5. 20. 14  | 5                    | 13. 14. 48 I    |
| 3                            | 12. 51. 40 | 4                             | 18. 37. 25 | 6                    | 15. 1. 9 E      |
| 5                            | 7. 19. 55  | 8                             | 7. 54. 39  | 12                   | 17. 14. 45 I    |
| 7                            | 1. 48. 13  |                               | 21. 11. 52 | 12                   | 19. 0. 0 E      |
| 8                            | 20. 16. 16 | 5                             | 10. 29. 5  | 19                   | 21. 14. 25 I    |
| 10                           | 14. 44. 11 | 18                            | 23. 46. 15 | 19                   | 22. 58. 35 E    |
| 12                           | 0. 12. 50  | 22                            | 13. 3. 27  | 27                   | 1. 14. 4 I      |
| 14                           | 3. 41. 5   | 26                            | 2. 20. 35  | 27                   | 2. 57. 10 E     |
| 15                           | 22. 9. 14  | 29                            | 15. 37. 52 | IV. Satellite. Conj. |                 |
| 17                           | 16. 37. 25 |                               |            | 6                    | 10. 30. 42 Inf. |
| 19                           | 11. 5. 35  |                               |            | 14                   | 19. 57. 5 Sup.  |
| 1                            | 5. 33. 46  |                               |            | 23                   | 4. 38. 53 Inf.  |
| 23                           | 0. 1. 52   |                               |            |                      |                 |
| 24                           | 18. 29. 59 |                               |            |                      |                 |
| 26                           | 12. 58. 12 |                               |            |                      |                 |
| 28                           | 7. 26. 24  |                               |            |                      |                 |
| 30                           | 1. 54. 30  |                               |            |                      |                 |



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JUNE 1774.

| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric La-<br>titude. | Decli-<br>nation. | Paff.<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|-------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                   |

MERCURY. Sup.  $\delta$  13<sup>d</sup> 10<sup>h</sup>.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 0. 9. 16  | 4. 10 S | 1. 26. 40 | 1. 10 S | 18. 18 N | 23. 5  |
| 7  | 1. 12. 52 | 0. 22 S | 2. 8. 52  | 0. 5 S  | 21. 44   | 23. 32 |
| 13 | 2. 20. 14 | 3. 58 N | 2. 21. 54 | 0. 55 N | 24. 8    | 0. 0   |
| 19 | 3. 26. 59 | 6. 37   | 3. 4. 55  | 1. 38   | 25. 1    | 0. 30  |
| 25 | 4. 29. 5  | 6. 48   | 3. 17. 9  | 1. 55   | 24. 16   | 0. 59  |

## VENUS.

|    |            |         |           |         |         |        |
|----|------------|---------|-----------|---------|---------|--------|
| 1  | 9. 24. 36  | 2. 11 S | 0. 25. 7  | 2. 16 S | 7. 37 N | 20. 59 |
| 7  | 10. 4. 5   | 2. 35   | 1. 1. 0   | 2. 30   | 9. 30   | 20. 57 |
| 13 | 10. 13. 34 | 2. 54   | 1. 7. 4   | 2. 39   | 11. 23  | 20. 55 |
| 19 | 10. 23. 4  | 3. 9    | 1. 13. 18 | 2. 43   | 13. 14  | 20. 55 |
| 25 | 11. 2. 34  | 3. 19   | 1. 19. 41 | 2. 42   | 15. 4   | 20. 55 |

## MARS.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 0. 23. 40 | 0. 46 S | 1. 13. 4  | 0. 29 S | 15. 19 N | 22. 4  |
| 7  | 0. 27. 12 | 0. 40   | 1. 17. 26 | 0. 26   | 16. 39   | 21. 57 |
| 13 | 1. 0. 43  | 0. 34   | 1. 21. 47 | 0. 22   | 17. 53   | 21. 50 |
| 19 | 1. 4. 12  | 0. 27   | 1. 26. 5  | 0. 18   | 19. 1    | 21. 42 |
| 25 | 1. 7. 39  | 0. 20   | 2. 0. 21  | 0. 14   | 20. 2    | 21. 35 |

## JUPITER.

|    |           |         |          |        |          |        |
|----|-----------|---------|----------|--------|----------|--------|
| 1  | 0. 26. 57 | 1. 15 S | 1. 4. 0  | 1. 5 S | 11. 51 N | 21. 28 |
| 7  | 0. 27. 30 | 1. 15   | 1. 5. 16 | 1. 5   | 12. 16   | 21. 8  |
| 13 | 0. 28. 2  | 1. 15   | 1. 6. 30 | 1. 6   | 12. 40   | 20. 48 |
| 19 | 0. 28. 35 | 1. 14   | 1. 7. 41 | 1. 7   | 13. 2    | 20. 28 |
| 25 | 0. 29. 8  | 1. 14   | 1. 8. 48 | 1. 7   | 13. 23   | 20. 7  |

SATURN.  $\square$  10<sup>d</sup> 3<sup>h</sup>.

|    |           |         |           |         |         |       |
|----|-----------|---------|-----------|---------|---------|-------|
| 1  | 5. 25. 32 | 2. 15 N | 5. 19. 27 | 2. 18 N | 6. 18 N | 6. 46 |
| 7  | 5. 25. 44 | 2. 15   | 5. 19. 35 | 2. 17   | 6. 14   | 6. 22 |
| 13 | 5. 25. 57 | 2. 16   | 5. 19. 47 | 2. 16   | 6. 8    | 5. 58 |
| 19 | 5. 26. 9  | 2. 16   | 5. 20. 3  | 2. 14   | 6. 0    | 5. 34 |
| 25 | 5. 26. 21 | 2. 16   | 5. 20. 21 | 2. 13   | 5. 52   | 5. 10 |

JUNE 1774.

[65]

| Days of the Month. | Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midnight. |
|--------------------|-------|---------------------------|-------------------------------|--------------------------|------------------------------|
|                    |       | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D. M. S.                     |
| 1                  | W.    | 11. 12. 47. 33            | 11. 19. 20. 55                | 0. 20. 50 N              | 0. 4. 50 S                   |
| 2                  | Th.   | 11. 25. 49. 2             | 0. 2. 12. 25                  | 0. 38. 57 S              | 1. 12. 10                    |
| 3                  | F.    | 0. 8. 31. 26              | 0. 14. 46. 38                 | 1. 44. 5                 | 2. 14. 21                    |
| 4                  | Sa.   | 0. 20. 58. 24             | 0. 27. 7. 22                  | 2. 42. 47                | 3. 9. 0                      |
| 5                  | Su.   | 1. 3. 13. 41              | 1. 9. 17. 52                  | 3. 32. 51                | 3. 54. 4                     |
| 6                  | M.    | 1. 15. 20. 12             | 1. 21. 21. 1                  | 4. 12. 36                | 4. 28. 7                     |
| 7                  | Tu.   | 1. 27. 20. 30             | 2. 3. 19. 1                   | 4. 40. 38                | 4. 50. 0                     |
| 8                  | W.    | 2. 9. 16. 31              | 2. 15. 13. 29                 | 4. 56. 10                | 4. 59. 4                     |
| 9                  | Th.   | 2. 21. 9. 52              | 2. 27. 5. 55                  | 4. 58. 44                | 4. 55. 11                    |
| 10                 | F.    | 3. 3. 1. 45               | 3. 8. 57. 42                  | 4. 48. 20                | 4. 33. 25                    |
| 11                 | Sa.   | 3. 14. 53. 46             | 3. 20. 50. 25                 | 4. 25. 24                | 4. 9. 32                     |
| 12                 | Su.   | 3. 26. 47. 45             | 4. 2. 46. 13                  | 3. 50. 49                | 3. 29. 31                    |
| 13                 | M.    | 4. 8. 46. 4               | 4. 14. 47. 54                 | 3. 5. 48                 | 2. 39. 50                    |
| 14                 | Tu.   | 4. 20. 51. 54             | 4. 26. 58. 47                 | 2. 11. 49                | 1. 42. 7                     |
| 15                 | W.    | 5. 3. 9. 0                | 5. 9. 22. 59                  | 1. 10. 53                | 0. 38. 26 S                  |
| 16                 | Th.   | 5. 15. 41. 25             | 5. 22. 4. 49                  | 0. 5. 9 S                | 0. 28. 39 N                  |
| 17                 | F.    | 5. 28. 33. 49             | 6. 5. 8. 50                   | 1. 2. 35 N               | 1. 36. 12                    |
| 18                 | Sa.   | 6. 11. 50. 22             | 6. 18. 38. 37                 | 2. 9. 4                  | 2. 40. 39                    |
| 19                 | Su.   | 6. 25. 34. 8              | 7. 2. 36. 50                  | 3. 10. 24                | 3. 37. 51                    |
| 20                 | M.    | 7. 9. 46. 44              | 7. 17. 3. 36                  | 4. 2. 11                 | 4. 23. 5                     |
| 21                 | Tu.   | 7. 24. 26. 59             | 8. 1. 55. 58                  | 4. 39. 56                | 4. 52. 10                    |
| 22                 | W.    | 8. 9. 29. 46              | 8. 17. 7. 11                  | 4. 59. 26                | 5. 1. 28                     |
| 23                 | Th.   | 8. 24. 46. 45             | 9. 2. 27. 3                   | 4. 58. 7                 | 4. 47. 23                    |
| 24                 | F.    | 9. 10. 6. 44              | 9. 17. 44. 10                 | 4. 35. 27                | 4. 16. 38                    |
| 25                 | Sa.   | 9. 25. 17. 59             | 10. 2. 47. 11                 | 3. 53. 24                | 3. 26. 22                    |
| 26                 | Su.   | 10. 10. 10. 41            | 10. 17. 27. 41                | 2. 56. 7                 | 2. 23. 24                    |
| 27                 | M.    | 10. 24. 37. 46            | 11. 1. 40. 38                 | 1. 48. 53                | 1. 13. 12                    |
| 28                 | Tu.   | 11. 8. 36. 17             | 11. 15. 24. 52                | 0. 36. 59 N              | 0. 0. 50 N                   |
| 29                 | W.    | 11. 22. 6. 24             | 11. 28. 41. 3                 | 0. 34. 44 S              | 1. 9. 18 S                   |
| 30                 | Th.   | 0. 5. 10. 34              | 0. 11. 34. 6                  | 1. 42. 23                | 2. 13. 44                    |

| [66] J U N E 1774. |                  |         |                                 |                                 |                               |                                  |                                  |
|--------------------|------------------|---------|---------------------------------|---------------------------------|-------------------------------|----------------------------------|----------------------------------|
| Days of the Month. | Day of the Week. | D. Age. | D's Pass-<br>age over<br>Merid. | D's Right<br>Ascen. at<br>Noon. | D's Right<br>Asc. at<br>Midn. | D's De-<br>clination<br>at Noon. | D's De-<br>clination<br>at Midn. |
|                    |                  |         | H. M.                           | D. M.                           | D. M.                         | D. M.                            | D. M.                            |
| 1                  | W.               | 23      | 18. 54                          | 343. 57                         | 350. 15                       | 6. 18 S                          | 4. 18 S                          |
| 2                  | Th.              | 24      | 19. 40                          | 356. 25                         | 2. 30                         | 2. 16 S                          | 0. 13 S                          |
| 3                  | F.               | 25      | 20. 25                          | 8. 31                           | 14. 28                        | 1. 47 N                          | 3. 46 N                          |
| 4                  | Sa.              | 26      | 21. 10                          | 20. 24                          | 26. 19                        | 5. 41                            | 7. 31                            |
| 5                  | Sa.              | 27      | 21. 55                          | 32. 14                          | 38. 10                        | 9. 16                            | 10. 54                           |
| 6                  | M.               | 28      | 22. 40                          | 44. 7                           | 50. 7                         | 12. 25                           | 13. 48                           |
| 7                  | Tu.              | 29      | 23. 26                          | 56. 9                           | 62. 15                        | 15. 2                            | 16. 6                            |
| 8                  | W.               | 1       | ♂                               | 68. 22                          | 74. 32                        | 16. 59                           | 17. 41                           |
| 9                  | Th.              | 2       | 0. 13                           | 80. 44                          | 86. 57                        | 18. 12                           | 18. 31                           |
| 10                 | F.               | 3       | 1. 0                            | 93. 11                          | 99. 25                        | 18. 38                           | 18. 32                           |
| 11                 | Sa.              | 4       | 1. 47                           | 105. 39                         | 111. 52                       | 18. 14                           | 17. 44                           |
| 12                 | Sa.              | 5       | 2. 34                           | 118. 4                          | 124. 14                       | 17. 3                            | 16. 10                           |
| 13                 | M.               | 6       | 3. 21                           | 130. 22                         | 136. 28                       | 15. 6                            | 13. 52                           |
| 14                 | Tu.              | 7       | 4. 7                            | 142. 33                         | 148. 36                       | 12. 28                           | 10. 56                           |
| 15                 | W.               | 8       | 4. 52                           | 154. 39                         | 160. 43                       | 9. 16                            | 7. 28                            |
| 16                 | Th.              | 9       | 5. 38                           | 166. 48                         | 172. 55                       | 5. 34                            | 3. 36 N                          |
| 17                 | F.               | 10      | 6. 25                           | 179. 6                          | 185. 22                       | 1. 32 N                          | 0. 35 S                          |
| 18                 | Sa.              | 11      | 7. 14                           | 191. 44                         | 198. 13                       | 2. 42 S                          | 4. 50                            |
| 19                 | Sa.              | 12      | 8. 4                            | 204. 52                         | 211. 40                       | 6. 56                            | 8. 59                            |
| 20                 | M.               | 13      | 8. 53                           | 218. 40                         | 225. 52                       | 10. 56                           | 12. 44                           |
| 21                 | Tu.              | 14      | 9. 56                           | 233. 15                         | 240. 50                       | 14. 23                           | 15. 48                           |
| 22                 | W.               | 15      | 10. 57                          | 248. 36                         | 256. 31                       | 16. 58                           | 17. 50                           |
| 23                 | Th.              | 16      | 12. 0                           | 264. 31                         | 272. 35                       | 18. 24                           | 18. 37                           |
| 24                 | F.               | 17      | 13. 2                           | 280. 38                         | 288. 38                       | 18. 30                           | 18. 3                            |
| 25                 | Sa.              | 18      | 14. 3                           | 296. 31                         | 304. 16                       | 17. 17                           | 16. 13                           |
| 26                 | Sa.              | 19      | 15. 0                           | 311. 49                         | 319. 10                       | 14. 53                           | 13. 20                           |
| 27                 | M.               | 20      | 15. 54                          | 326. 19                         | 333. 15                       | 11. 37                           | 9. 45                            |
| 28                 | Tu.              | 21      | 16. 44                          | 340. 0                          | 346. 34                       | 7. 47                            | 5. 45                            |
| 29                 | W.               | 22      | 17. 32                          | 353. 59                         | 359. 16                       | 3. 40 S                          | 1. 35 S                          |
| 30                 | Th.              | 23      | 18. 18                          | 5. 26                           | 11. 30                        | 0. 30 N                          | 2. 32 N                          |



J U N E 1774.

[67]

| Days of the Month. | Days of the Week. | Semidr. $\Delta$ at Noon. | Semidr. $\Delta$ at Mid-night. | Hor. Par. $\Delta$ at Noon. | Hor. Par. $\Delta$ at Midnight. | Propor. Lo- gar. at Noon. | Propor. Lo- gar. at Midn. |
|--------------------|-------------------|---------------------------|--------------------------------|-----------------------------|---------------------------------|---------------------------|---------------------------|
|                    |                   | M. S.                     | M. S.                          | M. S.                       | M. S.                           |                           |                           |
| 1                  | W.                | 15. 40                    | 15. 33                         | 57. 29                      | 57. 5                           | 4957                      | 4987                      |
| 2                  | Th.               | 15. 27                    | 15. 21                         | 56. 42                      | 56. 20                          | 5017                      | 5045                      |
| 3                  | F.                | 15. 16                    | 15. 10                         | 56. 0                       | 55. 42                          | 5071                      | 5094                      |
| 4                  | Sa.               | 15. 6                     | 15. 2                          | 55. 24                      | 55. 10                          | 5118                      | 5136                      |
| 5                  | Su.               | 14. 58                    | 14. 55                         | 54. 50                      | 54. 44                          | 5154                      | 5170                      |
| 6                  | M.                | 14. 52                    | 14. 50                         | 54. 34                      | 54. 25                          | 5183                      | 5195                      |
| 7                  | Tu.               | 14. 48                    | 14. 46                         | 54. 18                      | 54. 12                          | 5205                      | 5213                      |
| 8                  | W.                | 14. 45                    | 14. 44                         | 54. 7                       | 54. 4                           | 5219                      | 5223                      |
| 9                  | Th.               | 14. 43                    | 14. 43                         | 54. 2                       | 54. 2                           | 5226                      | 5226                      |
| 10                 | F.                | 14. 43                    | 14. 44                         | 54. 2                       | 54. 4                           | 5226                      | 5223                      |
| 11                 | Sa.               | 14. 45                    | 14. 46                         | 54. 8                       | 54. 13                          | 5218                      | 5211                      |
| 12                 | Su.               | 14. 48                    | 14. 51                         | 54. 20                      | 54. 28                          | 5202                      | 5191                      |
| 13                 | M.                | 14. 53                    | 14. 57                         | 54. 38                      | 54. 51                          | 5178                      | 5161                      |
| 14                 | Tu.               | 15. 0                     | 15. 5                          | 55. 5                       | 55. 21                          | 5142                      | 5122                      |
| 15                 | W.                | 15. 9                     | 15. 15                         | 55. 39                      | 55. 59                          | 5098                      | 5072                      |
| 16                 | Th.               | 15. 21                    | 15. 27                         | 56. 21                      | 56. 45                          | 5044                      | 5013                      |
| 17                 | F.                | 15. 35                    | 15. 42                         | 57. 10                      | 57. 37                          | 4981                      | 4947                      |
| 18                 | Sa.               | 15. 50                    | 15. 57                         | 58. 5                       | 58. 33                          | 4912                      | 4877                      |
| 19                 | Su.               | 16. 5                     | 16. 13                         | 59. 1                       | 59. 29                          | 4843                      | 4809                      |
| 20                 | M.                | 16. 20                    | 16. 26                         | 59. 55                      | 60. 20                          | 4777                      | 4747                      |
| 21                 | Tu.               | 16. 32                    | 16. 38                         | 60. 42                      | 61. 1                           | 4721                      | 4698                      |
| 22                 | W.                | 16. 42                    | 16. 45                         | 61. 16                      | 61. 26                          | 4680                      | 4669                      |
| 23                 | Th.               | 16. 46                    | 16. 46                         | 61. 32                      | 61. 33                          | 4661                      | 4660                      |
| 24                 | F.                | 16. 45                    | 16. 43                         | 61. 28                      | 61. 19                          | 4666                      | 4677                      |
| 25                 | Sa.               | 16. 39                    | 16. 34                         | 61. 5                       | 60. 47                          | 4693                      | 4715                      |
| 26                 | Su.               | 16. 28                    | 16. 21                         | 60. 25                      | 60. 1                           | 4741                      | 4770                      |
| 27                 | M.                | 16. 14                    | 16. 6                          | 59. 34                      | 59. 6                           | 4802                      | 4837                      |
| 28                 | Tu.               | 15. 53                    | 15. 51                         | 58. 37                      | 58. 8                           | 4872                      | 4908                      |
| 29                 | W.                | 15. 43                    | 15. 35                         | 57. 40                      | 57. 12                          | 4943                      | 4979                      |
| 30                 | Th.               | 15. 28                    | 15. 21                         | 56. 45                      | 56. 21                          | 5013                      | 5044                      |

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| $\odot$<br>12 | Stars<br>Names.          | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|---------------|--------------------------|-------------|-------------|-------------|-------------|
|               |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1             | The Sun.                 | 88. 8. 31   | 86. 36. 50  | 85. 5. 30   | 83. 34. 30  |
| 2             |                          | 76. 4. 37   | 74. 35. 27  | 73. 6. 41   | 71. 38. 14  |
| 3             |                          | 64. 20. 13  | 62. 53. 26  | 61. 26. 54  | 60. 0. 37   |
| 4             |                          | 52. 52. 50  | 51. 27. 56  | 50. 3. 14   | 48. 38. 44  |
| 5             |                          | 41. 30. 28  | 40. 16. 13  | 38. 53. 8   |             |
| 11            | Regulus.                 | 42. 2. 29   | 40. 33. 43  | 39. 4. 54   | 37. 36. 3   |
| 12            |                          | 30. 11. 3   | 28. 41. 52  | 27. 12. 37  | 25. 43. 19  |
| 13            |                          | 18. 15. 56  | 16. 46. 21  | 15. 16. 45  | 13. 47. 9   |
| 14            | Spica $\alpha$           | 59. 47. 16  | 58. 16. 3   | 56. 44. 39  | 55. 13. 3   |
| 15            |                          | 47. 32. 5   | 45. 59. 17  | 44. 26. 15  | 42. 53. 0   |
| 16            |                          | 35. 3. 13   | 33. 28. 35  | 31. 53. 43  | 30. 18. 38  |
| 17            |                          | 22. 20. 36  | 20. 44. 44  | 19. 8. 58   | 17. 33. 22  |
| 18            | Antares.                 | 55. 8. 34   | 53. 29. 2   | 51. 49. 11  | 50. 9. 3    |
| 19            |                          | 41. 44. 5   | 40. 2. 23   | 38. 20. 32  | 36. 38. 36  |
| 20            |                          | 28. 9. 9    |             |             |             |
| 20            | $\alpha$ Aquila.         | 78. 16. 39  | 76. 39. 23  | 75. 1. 52   | 73. 24. 10  |
| 21            |                          | 65. 14. 23  | 63. 36. 30  | 61. 58. 45  | 60. 21. 12  |
| 22            |                          | 52. 18. 44  | 50. 43. 53  | 49. 9. 50   | 47. 36. 42  |
| 23            | $\beta$ Capri-<br>corni. | 35. 59. 37  | 34. 5. 2    | 32. 10. 25  | 30. 15. 48  |
| 24            |                          | 20. 43. 18  |             |             |             |
| 24            | $\alpha$ Pegasi.         | 69. 50. 48  | 68. 4. 13   | 66. 17. 57  | 64. 32. 3   |
| 25            |                          | 55. 49. 48  | 54. 7. 7    | 52. 25. 10  | 50. 44. 0   |
| 26            |                          | 42. 32. 28  | 40. 57. 39  | 39. 24. 16  | 37. 52. 25  |
| 27            | $\alpha$ Arietis.        | 69. 52. 11  | 68. 8. 59   | 66. 26. 18  | 64. 44. 9   |
| 28            |                          | 56. 21. 31  | 54. 42. 42  | 53. 4. 29   | 51. 26. 55  |
| 29            |                          | 43. 29. 9   | 41. 55. 45  | 40. 23. 7   | 38. 51. 19  |
| 30            |                          | 31. 26. 41  | 30. 1. 10   | 28. 37. 2   | 27. 14. 22  |
| 28            | The Sun.                 | 118. 6. 26  | 116. 30. 50 | 114. 55. 39 | 113. 20. 53 |
| 29            |                          | 105. 33. 34 | 104. 1. 20  | 102. 29. 29 | 100. 58. 2  |
| 30            |                          | 93. 29. 34  | 91. 57. 22  | 90. 28. 30  | 88. 59. 59  |
| J. 1          |                          | 81. 42. 24  |             |             |             |

JUNE 1774.

[69]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Day | Stars Names.              | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|-----|---------------------------|-------------|-------------|-------------|-------------|
|     |                           | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1   | The Sun.                  | 82. 3. 51   | 80. 33. 32  | 79. 3. 32   | 77. 33. 52  |
| 2   |                           | 70. 10. 4   | 68. 42. 12  | 67. 14. 36  | 65. 47. 16  |
| 3   |                           | 58. 34. 35  | 57. 8. 48   | 55. 43. 15  | 54. 17. 56  |
| 4   |                           | 47. 14. 27  | 45. 50. 24  | 44. 6. 33   | 43. 2. 55   |
| 10  | Regulus.                  | 47. 57.     | 46. 28. 33  | 44. 59. 54  | 43. 31. 13  |
| 11  |                           | 36. 7. 9    | 34. 38. 13  | 33. 9. 13   | 31. 40. 10  |
| 12  |                           | 24. 13. 57  | 22. 44. 31  | 21. 15. 2   | 19. 45. 30  |
| 13  |                           | 12. 17. 32  |             |             |             |
| 13  | Spica $\mu$               | 65. 50. 22  | 64. 19. 51  | 62. 49. 10  | 61. 18. 18  |
| 14  |                           | 53. 41. 16  | 52. 9. 17   | 50. 37. 5   | 49. 4. 41   |
| 15  |                           | 41. 19. 31  | 39. 45. 47  | 38. 11. 49  | 36. 37. 38  |
| 16  |                           | 28. 43. 20  | 27. 7. 51   | 25. 32. 13  | 23. 56. 27  |
| 17  |                           | 15. 58. 3   |             |             |             |
| 17  | Antares.                  | 61. 43. 34  | 60. 5. 18   | 58. 26. 43  | 56. 47. 48  |
| 18  |                           | 48. 28. 37  | 46. 47. 51  | 45. 6. 49   | 43. 25. 33  |
| 19  |                           | 34. 56. 37  | 33. 14. 38  | 31. 32. 42  | 29. 50. 51  |
| 20  | $\alpha$ Aquilæ.          | 71. 46. 19  | 70. 8. 20   | 68. 30. 22  | 66. 52. 21  |
| 21  |                           | 58. 43. 54  | 57. 6. 55   | 55. 30. 21  | 53. 54. 15  |
| 22  |                           | 46. 4. 37   |             |             |             |
| 22  | $\gamma$ Capri-<br>corni. | 43. 37. 16  | 41. 43. 0   | 39. 48. 37  | 37. 54. 9   |
| 23  |                           | 28. 21. 11  | 26. 26. 37  | 24. 32. 5   | 22. 37. 39  |
| 24  | $\alpha$ Pegasi.          | 62. 46. 34  | 61. 1. 32   | 59. 17. 3   | 57. 33. 9   |
| 25  |                           | 49. 3. 40   | 47. 24. 16  | 45. 45. 52  | 44. 8. 34   |
| 26  |                           | 36. 22. 14  |             |             |             |
| 26  | $\alpha$ Arietis.         | 76. 49. 52  | 75. 4. 44   | 73. 20. 4   | 71. 35. 53  |
| 27  |                           | 63. 2. 31   | 61. 21. 26  | 59. 40. 53  | 58. 0. 55   |
| 28  |                           | 49. 49. 59  | 48. 13. 43  | 46. 38. 9   | 45. 3. 17   |
| 29  |                           | 37. 20. 23  | 35. 50. 23  | 34. 21. 23  | 32. 53. 27  |
| 30  |                           | 25. 53. 22  |             |             |             |
| 27  | The Sun.                  |             |             | 121. 18. 55 | 119. 42. 28 |
| 28  |                           | 111. 46. 33 | 110. 12. 41 | 108. 39. 14 | 107. 6. 12  |
| 29  |                           | 99. 26. 58  | 97. 56. 19  | 96. 26. 2   | 94. 56. 7   |
| 30  |                           | 87. 31. 49  | 86. 3. 59   | 84. 36. 28  | 83. 9. 17   |



[70]

J U N E 1774.

Distances of Moon's Center from Stars, and from ☉ west of her.

| Days | Stars Names.       | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|------|--------------------|-------------|-------------|-------------|-------------|
|      |                    | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1    | β Capri-<br>corni. | 42. 2. 31   | 43. 41. 44  | 45. 20. 36  | 46. 59. 7   |
| 2    |                    | 55. 6. 50   |             |             |             |
| 3    | Aquila.            | 62. 11. 38  | 63. 36. 20  | 65. 1. 3    | 66. 25. 46  |
| 4    |                    | 73. 29. 4   | 74. 53. 34  | 76. 17. 58  | 77. 42. 17  |
|      |                    | 8. 42. 8    | 86. 5. 43   | 87. 20. 10  | 88. 52. 29  |
| 5    | α Pegasi.          | 47. 59. 4   | 49. 21. 20  | 50. 43. 20  | 52. 5. 32   |
| 6    |                    | 58. 59. 17  | 60. 22. 25  | 61. 45. 39  | 63. 8. 58   |
| 7    |                    | 70. 6. 33   |             |             |             |
| 12   | The Sun.           |             |             |             | 39. 35. 58  |
| 13   |                    | 46. 26. 19  | 47. 48. 53  | 49. 11. 37  | 50. 34. 32  |
| 14   |                    | 57. 31. 44  | 58. 55. 43  | 60. 19. 57  | 61. 44. 24  |
| 15   |                    | 68. 50. 11  | 70. 16. 4   | 71. 42. 13  | 73. 8. 38   |
| 16   |                    | 80. 25. 3   | 81. 53. 15  | 83. 21. 47  | 84. 50. 39  |
| 17   |                    | 92. 20. 11  | 93. 51. 11  | 95. 22. 33  | 96. 54. 18  |
| 18   |                    | 104. 33. 52 | 106. 12. 58 | 107. 47. 28 | 109. 22. 22 |
| 19   |                    | 117. 23. 19 | 119. 0. 46  | 120. 38. 36 |             |
| 17   | Regulus.           | 31. 52. 24  | 33. 30. 40  | 35. 9. 20   | 36. 48. 24  |
| 18   |                    | 45. 9. 53   | 46. 51. 23  | 48. 33. 19  | 50. 15. 41  |
| 19   |                    | 58. 54. 4   | 60. 39. 3   | 62. 24. 27  | 64. 10. 16  |
| 20   | Spica ♏            | 20. 0. 48   | 21. 40. 6   | 23. 32. 17  | 25. 19. 14  |
| 21   |                    | 34. 23. 0   | 36. 13. 14  | 38. 3. 53   | 39. 54. 55  |
| 22   |                    | 49. 15. 15  | 51. 8. 12   | 53. 1. 23   | 54. 54. 47  |
| 23   |                    | 64. 23. 50  | 66. 18. 8   | 68. 12. 19  | 70. 6. 32   |
| 24   | Antares.           | 34. 40. 49  | 36. 30. 27  | 38. 20. 22  | 40. 10. 27  |
| 25   |                    | 49. 21. 36  | 51. 11. 41  | 53. 1. 36   | 54. 51. 21  |
| 26   |                    | 63. 56. 38  | 65. 44. 49  | 67. 32. 39  | 69. 20. 9   |
| 27   |                    | 78. 12. 3   |             |             |             |
| 27   | β Capri-<br>corni. | 23. 51. 8   | 25. 37. 45  | 27. 23. 56  | 29. 9. 41   |
| 28   |                    | 37. 51. 57  | 39. 35. 7   | 41. 17. 50  | 43. 0. 8    |
| 29   |                    | 51. 24. 56  |             |             |             |
| 29   | α Aquila.          | 59. 5. 54   | 60. 32. 23  | 61. 58. 53  | 63. 25. 22  |
| 30   |                    | 70. 37. 8   | 72. 3. 12   | 73. 29. 8   | 74. 54. 55  |
| J. 1 |                    | 82. 1. 15   |             |             |             |

JUNE 1774.

[71]

Distances of ♄'s center from Stars, and from ☉ west of her.

| Days. | Stars Names.       | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|-------|--------------------|-------------|-------------|-------------|-------------|
|       |                    | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | ♄ Capric.          | 48. 37. 18  | 50. 15. 9   | 51. 52. 42  | 53. 29. 55  |
| 2     | ♄ Aquilæ           | 67. 50. 30  | 69. 15. 12  | 70. 39. 52  | 72. 4. 29   |
| 3     |                    | 79. 6. 30   | 80. 30. 36  | 81. 54. 34  | 83. 18. 25  |
| 4     |                    | 90. 15. 40  |             |             |             |
| 4     | ♄ Pegasi.          | 42. 36. 22  | 43. 56. 38  | 45. 17. 18  | 46. 38. 20  |
| 5     |                    | 53. 27. 58  | 54. 50. 34  | 56. 13. 19  | 57. 36. 14  |
| 6     |                    | 64. 32. 23  | 65. 55. 52  | 67. 19. 23  | 68. 42. 57  |
| 12    | The Sun.           | 40. 57. 44  | 42. 19. 39  | 43. 41. 43  | 45. 3. 56   |
| 13    |                    | 51. 57. 37  | 53. 20. 5-  | 54. 44. 17  | 56. 7. 54   |
| 14    |                    | 63. 9. 5    | 64. 34. 0   | 65. 59. 9   | 67. 24. 33  |
| 15    |                    | 74. 35. 19  | 76. 2. 18   | 77. 29. 35  | 78. 57. 10  |
| 16    |                    | 86. 19. 51  | 87. 49. 24  | 89. 19. 18  | 90. 49. 34  |
| 17    |                    | 98. 26. 25  | 99. 58. 56  | 101. 31. 51 | 103. 5. 10  |
| 18    |                    | 110. 57. 42 | 112. 33. 28 | 114. 9. 40  | 115. 46. 17 |
| 16    | Regulus.           | 25. 23. 12  | 26. 59. 55  | 28. 37. 2   | 30. 14. 31  |
| 17    |                    | 38. 27. 53  | 40. 7. 46   | 41. 48. 4   | 43. 28. 46  |
| 18    |                    | 51. 58. 28  | 53. 41. 43  | 55. 25. 24  | 57. 9. 31   |
| 19    |                    | 65. 56. 31  |             |             |             |
| 19    | ♄ Spica 𐌆          | 13. 11. 24  | 14. 51. 30  | 16. 33. 15  | 18. 16. 27  |
| 20    |                    | 27. 6. 52   | 28. 55. 7   | 30. 43. 55  | 32. 33. 13  |
| 21    |                    | 41. 46. 19  | 43. 38. 5   | 45. 30. 10  | 47. 22. 34  |
| 22    |                    | 56. 48. 21  | 58. 42. 4   | 60. 35. 56  | 62. 29. 55  |
| 23    |                    | 72. 0. 45   |             |             |             |
| 23    | Antares.           | 27. 26. 53  | 29. 14. 26  | 31. 2. 40   | 32. 51. 30  |
| 24    |                    | 42. 0. 40   | 43. 50. 55  | 45. 41. 11  | 47. 31. 25  |
| 25    |                    | 56. 40. 56  | 58. 30. 16  | 60. 19. 19  | 62. 8. 7    |
| 26    |                    | 71. 7. 19   | 72. 54. 6   | 74. 40. 29  | 76. 26. 28  |
| 27    | ♄ Capri-<br>corni. | 30. 55. 0   | 32. 39. 53  | 34. 24. 20  | 36. 8. 22   |
| 28    |                    | 44. 41. 59  | 46. 23. 24  | 48. 4. 21   | 49. 44. 52  |
| 29    | ♄ Aquilæ.          | 64. 51. 51  | 66. 18. 17  | 67. 44. 39  | 69. 10. 56  |
| 30    |                    | 76. 20. 34  | 77. 46. 2   | 79. 11. 18  | 80. 36. 23  |

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JUNE 1774.

Configurations of the SATELLITES of JUPITER  
at 3 o'clock in the Morning.

|    |     |       |          |          |    |          |          |
|----|-----|-------|----------|----------|----|----------|----------|
| 1  |     | 4.    | .3       | .1       | ⊙  | 2.       |          |
| 2  | 4.  |       |          | 2.<br>.3 | ⊙  | 1.       |          |
| 3  | .4  |       |          | .2       | .1 | ⊙        | .3       |
| 4  | .4  |       |          |          | ⊙  | .2       | .7 1.0   |
| 5  |     | .4    |          |          | ⊙  | .1 2.    | 3.       |
| 6  | 3.0 |       | 2.<br>.4 | 1.       | ⊙  |          |          |
| 7  | 2.0 |       | 3.       |          | .4 | ⊙        | .1       |
| 8  |     |       | .3       | .1       | ⊙  | 2.<br>.4 |          |
| 9  |     |       |          | .3 2.    | ⊙  | 1.       | .4       |
| 10 |     |       |          | .2       | .1 | ⊙        | .3 .4    |
| 11 | 1.0 |       |          |          | ⊙  | .2       | .3 .4    |
| 12 | 1.0 |       |          |          | ⊙  | 2.       | 3. 4.    |
| 13 |     |       | 2.       | 1.       | ⊙  | 3        | 4.       |
| 14 |     |       | 3.       |          | .2 | ⊙        | .1 4.    |
| 15 |     | 3.    |          | 1.       | ⊙  | 4.       | .2       |
| 16 |     |       |          | .3 4. 2. | ⊙  | 1.       |          |
| 17 |     |       | 4.       | .2 .1    | ⊙  | .3       |          |
| 18 |     | 4.    |          |          | ⊙  | 1. 2.    | .3       |
| 19 | 4.  |       |          |          | ⊙  | 2.       | 3. 1.0   |
| 20 | .4  |       |          | 2.       | 1. | ⊙        | 3.       |
| 21 | .4  |       |          | 3.       | .2 | ⊙        | .1       |
| 22 |     | .4 3. |          | 1.       | ⊙  |          | .2       |
| 23 | 2.0 |       | .3 .4    |          | ⊙  | .1       |          |
| 24 | 4.0 |       | .2 .1    | .3       | ⊙  |          |          |
| 25 |     |       |          |          | ⊙  | 1.<br>.2 | .4 .3    |
| 26 |     |       |          |          | .1 | ⊙        | 2. 3. 4. |
| 27 | 1.0 |       |          | 2.       | ⊙  | 3.       | .1       |
| 28 |     |       |          | .3       | ⊙  | .1       |          |
| 29 |     |       | 3.       | 1.       | ⊙  | .2       |          |
| 30 |     |       | .2       |          | ⊙  | 2.<br>.1 | 4.       |



| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.    | Phases of the Moon.                                  |
|--------------------|-------------------|---------------------------|------------------------------------------------------|
|                    |                   |                           | D. H. M.                                             |
| 1                  | F.                |                           | New Moon — 8. 9. 17                                  |
| 2                  | Sa.               | Visitation of V. Mary.    | First Quarter — 16. 4. 36                            |
| 3                  | Su.               | 5th Sunday after Trinity. | Full Moon — 22. 18. 41                               |
| 4                  | M.                | Transl. of S. Martin.     | Last Quarter — 29. 20. 17                            |
| 5                  | Tu.               | Camb. Commencement.       | Other Phenomena.                                     |
| 6                  | W.                |                           | D.                                                   |
| 7                  | Th.               |                           | 4. ☾ ☿ Im. 15 <sup>h</sup> . 5'. *                   |
| 8                  | F.                | Camb. Term ends.          | 3 <sup>h</sup> 1/2 S. of ☿'s cent.                   |
| 9                  | Sa.               |                           | Em. 16 <sup>h</sup> . 3'. * 5' S.                    |
| 10                 | Su.               | 6th Sunday after Trinity. | ☾ 1 ad ☿ 18 <sup>h</sup> . 36'.                      |
| 11                 | M.                | Oxford Act.               | ☾ 2 ad ☿ 19 <sup>h</sup> . 7'.                       |
| 12                 | Tu.               |                           | 5. ☾ ☿ Im. 1 <sup>h</sup> . 6'. * 1 <sup>h</sup> 1/2 |
| 13                 | W.                |                           | N. of ☿'s cent. Em.                                  |
| 14                 | Th.               |                           | 2 <sup>h</sup> . 14'. * 3' N.                        |
| 15                 | F.                | Swithin.                  | 9. ☿ ☽ diff. Lat. 12'.                               |
| 16                 | Sa.               | Oxf. Term ends.           | 11. ☾ ☽ Im. 0 <sup>h</sup> . 56'.                    |
| 17                 | Su.               | 7th Sunday after Trinity. | 12. ☾ ☽ Im. 5 <sup>h</sup> . 47'.                    |
| 18                 | M.                |                           | 13. ☾ ☽ Im. 10 <sup>h</sup> . 53'.                   |
| 19                 | Tu.               |                           | ☾ ☽ Im. 21 <sup>h</sup> . 28'.                       |
| 20                 | W.                | Margaret.                 | 14. ☾ ☽ Im. 11 <sup>h</sup> . 56'.                   |
| 21                 | Th.               |                           | ☾ ☽ Im. 21 <sup>h</sup> . 48'.                       |
| 22                 | F.                | Q. of Denmark born 1751.  | 15. ☾ ☽ Im. 12 <sup>h</sup> . 31'.                   |
| 23                 | Sa.               | [Magdalen.                | 16. ☿ ☽ diff. Lat. 54'.                              |
| 24                 | Su.               | 8th Sunday after Trinity. | ☾ ☽ Im. 17 <sup>h</sup> . 25'.                       |
| 25                 | M.                | St. James.                | 18. ☾ ☽ Im. 4 <sup>h</sup> . 42'.                    |
| 26                 | Tu.               | St. Anne.                 | ☾ ☽ Im. 7 <sup>h</sup> . 43'. *                      |
| 27                 | W.                |                           | 7'. N. of ☿'s cent.                                  |
| 28                 | Th.               |                           | Em. 8 <sup>h</sup> . 49'. * 8' N.                    |
| 29                 | F.                |                           | 20. ☿ ☽ diff. Lat. 2°. 4'.                           |
| 30                 | Sa.               |                           | 22. ☽ enters Im. at 9 <sup>h</sup> . 48'.            |
| 31                 | Su.               | 9th Sunday after Trinity. | ☾ ☽ Im. 19 <sup>h</sup> . 34'.                       |
|                    |                   |                           | 23. ☿ ☽ diff. Lat. 23'.                              |
|                    |                   |                           | 25. ☿ ☽ Im. diff. Lat. 39'.                          |
|                    |                   |                           | 31. ☿ ☽ Im. diff. Lat. 34'.                          |
|                    |                   |                           | ☾ ☽ Im. 22 <sup>h</sup> . 52'.                       |

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J U L Y 1774.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declina. North. | Equat. of Time. Add. | Diff. |
|--------------------|-------------------|------------------|---------------------------|-----------------------|----------------------|-------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.              | M. S.                | S.    |
| 1                  | F.                | 3. 9. 34. 24     | 6. 41. 40. 5              | 23. 7. 13             | 3. 18, 7             | 11, 4 |
| 2                  | Sa.               | 3. 10. 31. 36    | 6. 45. 48, 5              | 23. 2. 53             | 3. 30, 1             | 11, 2 |
| 3                  | Su.               | 3. 11. 28. 49    | 6. 49. 56, 2              | 22. 58. 10            | 3. 41, 3             | 11, 0 |
| 4                  | M.                | 3. 12. 26. 2     | 6. 54. 3, 8               | 22. 53. 2             | 3. 52, 3             | 10, 6 |
| 5                  | Tu.               | 3. 13. 23. 16    | 6. 58. 10, 9              | 22. 47. 31            | 4. 2, 9              | 10, 3 |
| 6                  | W.                | 3. 14. 20. 30    | 7. 2. 17, 8               | 22. 41. 36            | 4. 13, 2             | 10, 0 |
| 7                  | Th.               | 3. 15. 17. 44    | 7. 6. 24, 4               | 22. 35. 17            | 4. 23, 2             | 9, 6  |
| 8                  | F.                | 3. 16. 14. 58    | 7. 10. 30, 5              | 22. 28. 34            | 4. 32, 8             | 9, 1  |
| 9                  | Sa.               | 3. 17. 12. 13    | 7. 14. 36, 3              | 22. 21. 28            | 4. 41, 9             | 8, 8  |
| 10                 | Su.               | 3. 18. 9. 28     | 7. 18. 41, 7              | 22. 13. 59            | 4. 50, 7             | 8, 4  |
| 11                 | M.                | 3. 19. 6. 43     | 7. 22. 46, 7              | 22. 6. 8              | 4. 59, 1             | 7, 9  |
| 12                 | Tu.               | 3. 20. 3. 58     | 7. 26. 51, 2              | 21. 57. 53            | 5. 7, 0              | 7, 4  |
| 13                 | W.                | 3. 21. 1. 13     | 7. 30. 55, 1              | 21. 49. 16            | 5. 14, 4             | 6, 9  |
| 14                 | Th.               | 3. 21. 58. 28    | 7. 34. 58, 6              | 21. 40. 16            | 5. 21, 3             | 6, 5  |
| 15                 | F.                | 3. 22. 55. 44    | 7. 39. 1, 6               | 21. 30. 54            | 5. 27, 8             | 5, 9  |
| 16                 | Sa.               | 3. 23. 52. 59    | 7. 43. 4, 1               | 21. 21. 10            | 5. 33, 7             | 5, 4  |
| 17                 | Su.               | 3. 24. 50. 15    | 7. 47. 6, 0               | 21. 11. 4             | 5. 39, 1             | 4, 8  |
| 18                 | M.                | 3. 25. 47. 31    | 7. 51. 7, 4               | 21. 0. 37             | 5. 43, 9             | 4, 2  |
| 19                 | Tu.               | 3. 26. 44. 47    | 7. 55. 8, 3               | 20. 49. 49            | 5. 48, 1             | 3, 7  |
| 20                 | W.                | 3. 27. 42. 3     | 7. 59. 8, 5               | 20. 38. 40            | 5. 51, 8             | 3, 2  |
| 21                 | Th.               | 3. 28. 39. 20    | 8. 3. 8, 2                | 20. 27. 10            | 5. 55, 0             | 2, 5  |
| 22                 | F.                | 3. 29. 36. 37    | 8. 7. 7, 3                | 20. 15. 19            | 5. 57, 5             | 2, 0  |
| 23                 | Sa.               | 4. 0. 33. 55     | 8. 11. 5, 9               | 20. 3. 8              | 5. 59, 5             | 1, 5  |
| 24                 | Su.               | 4. 1. 31. 14     | 8. 15. 3, 9               | 19. 50. 37            | 6. 1, 0              | 0, 8  |
| 25                 | M.                | 4. 2. 28. 33     | 8. 19. 1, 3               | 19. 37. 46            | 6. 1, 8              | 0, 2  |
| 26                 | Tu.               | 4. 3. 25. 53     | 8. 22. 53, 1              | 19. 24. 35            | 6. 2, 0              | 0, 3  |
| 27                 | W.                | 4. 4. 23. 13     | 8. 26. 54, 3              | 19. 11. 5             | 6. 1, 7              | 0, 9  |
| 28                 | Th.               | 4. 5. 20. 36     | 8. 30. 50, 0              | 18. 57. 16            | 6. 0, 8              | 1, 4  |
| 29                 | F.                | 4. 6. 18. 0      | 8. 34. 45, 1              | 18. 43. 8             | 5. 59, 4             | 2, 0  |
| 30                 | Sa.               | 4. 7. 15. 25     | 8. 38. 39, 6              | 18. 28. 4             | 5. 57, 4             | 2, 7  |
| 31                 | Su.               | 4. 8. 12. 51     | 8. 42. 33, 5              | 18. 13. 57            | 5. 54, 7             | 3, 2  |

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| Days of the Month. | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|--------------------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|                    | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1                  | 15. 46. 9                        | 1. 8. 7                                            | 2. 23. 0                           | 0. 007235                              | 5. 16. 29                       |
| 7                  | 15. 47. 0                        | 1. 8. 4                                            | 2. 23. 0                           | 0. 007208                              | 5. 16. 9                        |
| 13                 | 15. 47. 2                        | 1. 8. 0                                            | 2. 23. 1                           | 0. 007083                              | 5. 15. 50                       |
| 19                 | 15. 47. 6                        | 1. 7. 6                                            | 2. 23. 2                           | 0. 006872                              | 5. 15. 31                       |
| 25                 | 15. 48. 2                        | 1. 7. 1                                            | 2. 23. 4                           | 0. 006606                              | 5. 15. 12                       |

Eclipses of the SATELLITES of J U P I T E R.

| I. Satellite.<br>Immersion. |            | II. Satellite. |              | III. Satellite.                 |              |
|-----------------------------|------------|----------------|--------------|---------------------------------|--------------|
| Days                        | H. M. S.   | Days           | H. M. S.     | Days                            | H. M. S.     |
| 1                           | 20. 22. 45 | 3              | 4. 55. 20 I  | 4                               | 5. 13. 31 I  |
| 3                           | 14* 50. 54 | 3              | 7. 13. 53 E  | 4                               | 6. 56. 7 E   |
| 5                           | 9. 19. 8   | 6              | 18. 12. 49 I | 11                              | 9. 13. 17 I  |
| 7                           | 3. 47. 20  | 6              | 20. 31. 17 E | 11                              | 10. 54. 57 E |
| 8                           | 22. 15. 33 | 10             | 7. 30. 26 I  | 18                              | 13* 13. 22 I |
| 10                          | 16. 43. 48 | 10             | 9. 48. 52 E  | 18                              | 14* 54. 6 E  |
| 12                          | 11. 11. 57 | 13             | 20. 48. 9 I  | 25                              | 17. 13. 53 I |
| 14                          | 5. 40. 14  | 13             | 23. 6. 32 E  | 25                              | 18. 53. 43 E |
| 16                          | 0. 8. 33   | 17             | 10. 6. 1 I   | IV. Satellite.<br>Conjunctions. |              |
| 17                          | 18. 36. 51 | 17             | 12. 24. 23 E |                                 |              |
| 19                          | 13* 5. 11  | 20             | 23. 24. 4 I  |                                 |              |
| 21                          | 7. 33. 37  | 21             | 1. 42. 22 E  |                                 |              |
| 23                          | 2. 1. 55   | 24             | 12* 42. 15 I | 1                               | 14* 7 Sup.   |
| 24                          | 20. 30. 23 | 24             | 15* 0. 29 E  | 9                               | 23. 14 Inf.  |
| 26                          | 14* 58. 49 | 28             | 2. 0. 36 I   | 18                              | 8. 19 Sup.   |
| 28                          | 9. 27. 21  | 28             | 4. 18. 46 E  | 26                              | 17. 26 Inf.  |
| 30                          | 3. 55. 46  | 31             | 15* 19. 7 I  |                                 |              |
| 31                          | 22. 24. 19 | 31             | 17. 37. 15 E |                                 |              |



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J U L Y 1774.

| Days. | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Passage over Merid. |
|-------|-------------------------|------------------------|-----------------------|----------------------|--------------|---------------------|
|       | S. D. M.                | D. M.                  | S. D. M.              | D. M.                | D. M.        | H. M.               |

MERCURY. Gr. El. 21<sup>d</sup>.

|    |           |         |           |         |          |       |
|----|-----------|---------|-----------|---------|----------|-------|
| 1  | 5. 25. 59 | 5. 24 N | 5. 23. 11 | 1. 47 N | 22. 17 N | 1. 21 |
| 7  | 6. 17. 48 | 3. 18   | 4. 7. 59  | 1. 16   | 19. 31   | 1. 37 |
| 13 | 7. 7. 1   | 1. 5 N  | 4. 16. 31 | 0. 20 N | 16. 22   | 1. 46 |
| 19 | 7. 24. 27 | 1. 3 S  | 4. 23. 39 | 0. 32 S | 13. 9    | 1. 48 |
| 25 | 8. 11. 4  | 2. 59   | 4. 29. 9  | 1. 43   | 10. 11   | 1. 44 |

## V E N U S.

|    |            |         |           |         |          |        |
|----|------------|---------|-----------|---------|----------|--------|
| 1  | 11. 12. 4  | 3. 23 S | 1. 26. 9  | 2. 37 S | 16. 45 N | 20. 57 |
| 7  | 11. 21. 36 | 3. 22   | 2. 2. 47  | 2. 23   | 18. 19   | 20. 59 |
| 13 | 0. 1. 9    | 3. 15   | 2. 9. 29  | 2. 17   | 19. 38   | 21. 2  |
| 19 | 0. 10. 42  | 3. 3    | 2. 16. 15 | 2. 3    | 20. 42   | 21. 6  |
| 25 | 0. 20. 16  | 2. 45   | 2. 23. 6  | 1. 47   | 21. 30   | 21. 12 |

## M A R S.

|    |           |         |           |        |          |        |
|----|-----------|---------|-----------|--------|----------|--------|
| 1  | 1. 11. 4  | 0. 14 S | 2. 4. 35  | 0. 9 S | 20. 56 N | 21. 27 |
| 7  | 1. 14. 27 | 0. 8    | 2. 8. 47  | 0. 5   | 21. 42   | 21. 21 |
| 13 | 1. 17. 48 | 0. 1 S  | 2. 12. 56 | 0. 1 S | 22. 22   | 21. 14 |
| 19 | 1. 21. 7  | 0. 6 N  | 2. 17. 3  | 0. 4 N | 22. 55   | 21. 8  |
| 25 | 1. 24. 24 | 0. 12   | 2. 21. 7  | 0. 9   | 23. 19   | 21. 1  |

## J U P I T E R.

|    |           |         |           |        |          |        |
|----|-----------|---------|-----------|--------|----------|--------|
| 1  | 0. 29. 41 | 1. 14 S | 1. 9. 53  | 1. 8 S | 13. 43 N | 19. 46 |
| 7  | 1. 0. 14  | 1. 14   | 1. 10. 53 | 1. 9   | 14. 1    | 19. 25 |
| 13 | 1. 0. 47  | 1. 13   | 1. 11. 49 | 1. 10  | 14. 18   | 19. 4  |
| 19 | 1. 1. 19  | 1. 13   | 1. 12. 40 | 1. 10  | 14. 33   | 18. 44 |
| 25 | 1. 1. 52  | 1. 13   | 1. 13. 27 | 1. 11  | 14. 46   | 18. 23 |

## S A T U R N.

|    |           |         |           |         |         |       |
|----|-----------|---------|-----------|---------|---------|-------|
| 1  | 5. 26. 33 | 2. 16 N | 5. 20. 43 | 2. 12 N | 5. 42 N | 4. 47 |
| 7  | 5. 26. 46 | 2. 16   | 5. 21. 8  | 2. 11   | 5. 32   | 4. 24 |
| 13 | 5. 26. 58 | 2. 17   | 5. 21. 36 | 2. 10   | 5. 20   | 4. 1  |
| 19 | 5. 27. 10 | 2. 17   | 5. 22. 6  | 2. 10   | 5. 8    | 3. 39 |
| 25 | 5. 27. 22 | 2. 17   | 5. 22. 39 | 2. 9    | 4. 54   | 3. 17 |

J U L Y 1774.

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| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D.M.S.                   |
| 1                  | F.                | 0. 17. 52. 34             | 0. 24. 6. 35                  | 2. 43. 2 S               | 3. 9. 55 S               |
| 2                  | Sa.               | 1. 0. 16. 40              | 1. 6. 23. 25                  | 3. 34. 26                | 3. 56. 10                |
| 3                  | Su.               | 1. 12. 27. 21             | 1. 18. 28. 57                 | 4. 15. 5                 | 4. 30. 58                |
| 4                  | M.                | 1. 24. 28. 37             | 2. 0. 26. 49                  | 4. 43. 47                | 4. 53. 24                |
| 5                  | Tu.               | 2. 6. 23. 58              | 2. 12. 20. 19                 | 4. 59. 50                | 5. 3. 1                  |
| 6                  | W.                | 2. 18. 16. 20             | 2. 24. 12. 12                 | 5. 2. 53                 | 4. 59. 27                |
| 7                  | Th.               | 3. 0. 8. 3                | 3. 6. 4. 15                   | 4. 52. 47                | 4. 42. 58                |
| 8                  | F.                | 3. 12. 0. 55              | 3. 17. 58. 15                 | 4. 30. 2                 | 4. 14. 7                 |
| 9                  | Sa.               | 3. 23. 56. 28             | 3. 29. 55. 45                 | 3. 55. 20                | 3. 33. 54                |
| 10                 | Su.               | 4. 5. 56. 14              | 4. 11. 58. 16                 | 3. 9. 59                 | 2. 43. 49                |
| 11                 | M.                | 4. 18. 1. 57              | 4. 24. 7. 42                  | 2. 15. 35                | 1. 45. 40                |
| 12                 | Tu.               | 5. 0. 15. 43              | 5. 6. 26. 27                  | 1. 14. 14                | 0. 41. 44 S              |
| 13                 | W.                | 5. 12. 40. 9              | 5. 18. 57. 17                 | 0. 8. 21 S               | 0. 25. 26 N              |
| 14                 | Th.               | 5. 25. 18. 17             | 6. 1. 43. 34                  | 0. 59. 17 N              | 1. 32. 46                |
| 15                 | F.                | 6. 8. 13. 26              | 6. 14. 48. 28                 | 2. 5. 30                 | 2. 37. 0                 |
| 16                 | Sa.               | 6. 21. 28. 50             | 6. 28. 15. 5                  | 3. 6. 48                 | 3. 34. 26                |
| 17                 | Su.               | 7. 5. 7. 15               | 7. 12. 5. 43                  | 3. 59. 22                | 4. 21. 13                |
| 18                 | M.                | 7. 19. 10. 12             | 7. 26. 20. 51                 | 4. 39. 22                | 4. 53. 26                |
| 19                 | Tu.               | 8. 3. 37. 15              | 8. 10. 58. 55                 | 5. 2. 59                 | 5. 7. 40                 |
| 20                 | W.                | 8. 18. 25. 6              | 8. 25. 55. 4                  | 5. 7. 14                 | 5. 1. 35                 |
| 21                 | Th.               | 9. 3. 27. 30              | 9. 11. 1. 51                  | 4. 50. 40                | 4. 34. 37                |
| 22                 | F.                | 9. 18. 36. 13             | 9. 26. 9. 37                  | 4. 13. 44                | 3. 48. 24                |
| 23                 | Sa.               | 10. 3. 40. 41             | 10. 11. 8. 20                 | 3. 19. 15                | 2. 46. 50                |
| 24                 | Su.               | 10. 18. 31. 23            | 10. 25. 49. 6                 | 2. 11. 52                | 1. 35. 8                 |
| 25                 | M.                | 11. 3. 0. 42              | 11. 10. 5. 50                 | 0. 57. 21 N              | 0. 19. 10 N              |
| 26                 | Tu.               | 11. 17. 4. 4              | 11. 23. 55. 23                | 0. 18. 42 S              | 0. 55. 42 S              |
| 27                 | W.                | 0. 0. 39. 53              | 0. 7. 17. 46                  | 1. 31. 19                | 2. 5. 10                 |
| 28                 | Th.               | 0. 13. 49. 18             | 0. 20. 14. 52                 | 2. 36. 50                | 3. 6. 1                  |
| 29                 | F.                | 0. 26. 35. 4              | 1. 2. 50. 24                  | 3. 32. 29                | 3. 56. 5                 |
| 30                 | Sa.               | 1. 9. 1. 16               | 1. 15. 8. 26                  | 4. 16. 35                | 4. 33. 58                |
| 31                 | Su.               | 1. 21. 12. 20             | 1. 27. 13. 38                 | 4. 48. 7                 | 4. 58. 56                |

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J U L Y 1774.

| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Asc. at Midn. | D's Declinat. at Noon. | D's Declin. at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|-------------------------|------------------------|----------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                   | D. M.                  | D. M.                |
| 1                  | F.                | 24       | 19. 2                   | 17. 31                    | 23. 29                  | 4. 31 N                | 6. 25 N              |
| 2                  | Sa.               | 25       | 19. 48                  | 29. 26                    | 35. 23                  | 8. 14                  | 9. 57                |
| 3                  | Su.               | 26       | 20. 33                  | 41. 20                    | 47. 18                  | 11. 33                 | 13. 1                |
| 4                  | M.                | 27       | 21. 19                  | 53. 18                    | 59. 20                  | 14. 19                 | 15. 29               |
| 5                  | Tu.               | 28       | 22. 5                   | 65. 25                    | 71. 33                  | 16. 28                 | 17. 17               |
| 6                  | W.                | 29       | 22. 52                  | 77. 43                    | 83. 55                  | 17. 55                 | 18. 21               |
| 7                  | Th.               | 30       | 23. 39                  | 90. 8                     | 96. 23                  | 18. 35                 | 18. 37               |
| 8                  | F.                | 1        |                         | 102. 38                   | 108. 53                 | 18. 26                 | 18. 4                |
| 9                  | Sa.               | 2        | 0. 26                   | 115. 7                    | 121. 20                 | 17. 29                 | 16. 42               |
| 10                 | Su.               | 3        | 1. 13                   | 127. 31                   | 133. 39                 | 15. 44                 | 14. 36               |
| 11                 | M.                | 4        | 1. 59                   | 139. 45                   | 145. 50                 | 13. 17                 | 11. 50               |
| 12                 | Tu.               | 5        | 2. 45                   | 151. 54                   | 157. 56                 | 10. 14                 | 8. 31                |
| 13                 | W.                | 6        | 3. 31                   | 163. 58                   | 170. 1                  | 6. 41                  | 4. 45                |
| 14                 | Th.               | 7        | 4. 18                   | 176. 5                    | 182. 12                 | 2. 46 N                | 0. 44 N              |
| 15                 | F.                | 8        | 5. 5                    | 188. 23                   | 194. 39                 | 1. 21 S                | 3. 26 S              |
| 16                 | Sa.               | 9        | 5. 53                   | 201. 1                    | 207. 31                 | 5. 30                  | 7. 31                |
| 17                 | Su.               | 10       | 6. 44                   | 214. 11                   | 221. 0                  | 9. 29                  | 11. 20               |
| 18                 | M.                | 11       | 7. 38                   | 228. 1                    | 235. 12                 | 13. 3                  | 14. 36               |
| 19                 | Tu.               | 12       | 8. 36                   | 242. 36                   | 250. 9                  | 15. 56                 | 17. 2                |
| 20                 | W.                | 13       | 9. 36                   | 257. 52                   | 265. 43                 | 17. 51                 | 18. 23               |
| 21                 | Th.               | 14       | 10. 38                  | 273. 38                   | 281. 36                 | 18. 35                 | 18. 27               |
| 22                 | F.                | 15       | 11. 38                  | 289. 32                   | 297. 25                 | 17. 59                 | 17. 12               |
| 23                 | Sa.               | 16       | 12. 38                  | 305. 11                   | 312. 49                 | 16. 7                  | 14. 47               |
| 24                 | Su.               | 17       | 13. 36                  | 320. 16                   | 327. 32                 | 13. 12                 | 11. 26               |
| 25                 | M.                | 18       | 14. 30                  | 334. 37                   | 341. 30                 | 9. 31                  | 7. 30                |
| 26                 | Tu.               | 19       | 15. 21                  | 348. 13                   | 354. 47                 | 5. 24                  | 3. 16 S              |
| 27                 | W.                | 20       | 16. 9                   | 1. 13                     | 7. 31                   | 1. 8 S                 | 0. 59 N              |
| 28                 | Th.               | 21       | 16. 56                  | 13. 44                    | 19. 52                  | 3. 3 N                 | 5. 3                 |
| 29                 | F.                | 22       | 17. 42                  | 25. 56                    | 31. 59                  | 6. 58                  | 8. 46                |
| 30                 | Sa.               | 23       | 18. 28                  | 38. 1                     | 44. 2                   | 10. 28                 | 12. 1                |
| 31                 | Su.               | 24       | 19. 13                  | 50. 4                     | 56. 7                   | 13. 27                 | 14. 43               |



J U L Y 1774.

[79]

| Days of the Month. | Days of the Week. | Semidr. $\Delta$ at Noon. | Semidr. $\Delta$ at Mid-night. | Hor. Par. $\Delta$ at Noon. | Hor. Par. $\Delta$ at Midnight. | Proport. Lo-Par. at Noon. | Proport. Lo-Par. at Midn. |
|--------------------|-------------------|---------------------------|--------------------------------|-----------------------------|---------------------------------|---------------------------|---------------------------|
|                    |                   | M. S.                     | M. S.                          | M. S.                       | M. S.                           |                           |                           |
| 1                  | F.                | 15. 15                    | 15. 9                          | 55. 57                      | 55. 37                          | 5075                      | 5100                      |
| 2                  | Sa.               | 15. 4                     | 15. 0                          | 55. 18                      | 55. 1                           | 5125                      | 5148                      |
| 3                  | Sa.               | 14. 56                    | 14. 53                         | 54. 47                      | 54. 35                          | 5166                      | 5182                      |
| 4                  | M.                | 14. 50                    | 14. 45                         | 54. 25                      | 54. 17                          | 5195                      | 5206                      |
| 5                  | Tu.               | 14. 46                    | 14. 45                         | 54. 11                      | 54. 8                           | 5214                      | 5218                      |
| 6                  | W.                | 14. 44                    | 14. 44                         | 54. 5                       | 54. 4                           | 5222                      | 5223                      |
| 7                  | Th.               | 14. 43                    | 14. 44                         | 54. 3                       | 54. 5                           | 5225                      | 5222                      |
| 8                  | F.                | 14. 45                    | 14. 46                         | 54. 9                       | 54. 13                          | 5217                      | 5211                      |
| 9                  | Sa.               | 14. 48                    | 14. 50                         | 54. 19                      | 54. 26                          | 5203                      | 5194                      |
| 10                 | Sa.               | 14. 52                    | 14. 55                         | 54. 34                      | 54. 43                          | 5183                      | 5171                      |
| 11                 | M.                | 14. 58                    | 15. 1                          | 54. 54                      | 55. 6                           | 5157                      | 5141                      |
| 12                 | Tu.               | 15. 4                     | 15. 8                          | 55. 19                      | 55. 34                          | 5124                      | 5104                      |
| 13                 | W.                | 15. 13                    | 15. 18                         | 55. 50                      | 56. 8                           | 5084                      | 5060                      |
| 14                 | Th.               | 15. 23                    | 15. 28                         | 56. 27                      | 56. 47                          | 5036                      | 5010                      |
| 15                 | F.                | 15. 34                    | 15. 40                         | 57. 9                       | 57. 31                          | 4983                      | 4955                      |
| 16                 | Sa.               | 15. 46                    | 15. 53                         | 57. 55                      | 58. 18                          | 4924                      | 4896                      |
| 17                 | Sa.               | 16. 0                     | 16. 7                          | 58. 43                      | 59. 7                           | 4865                      | 4835                      |
| 18                 | M.                | 16. 13                    | 16. 19                         | 59. 31                      | 59. 53                          | 4806                      | 4779                      |
| 19                 | Tu.               | 16. 24                    | 16. 29                         | 60. 14                      | 60. 32                          | 4754                      | 4733                      |
| 20                 | W.                | 16. 34                    | 16. 37                         | 60. 48                      | 61. 0                           | 4714                      | 4699                      |
| 21                 | Th.               | 16. 40                    | 16. 41                         | 61. 9                       | 61. 13                          | 4689                      | 4684                      |
| 22                 | F.                | 16. 41                    | 16. 39                         | 61. 13                      | 61. 7                           | 4684                      | 4691                      |
| 23                 | Sa.               | 16. 37                    | 16. 33                         | 60. 58                      | 60. 44                          | 4702                      | 4718                      |
| 24                 | Sa.               | 16. 28                    | 16. 22                         | 60. 26                      | 60. 5                           | 4740                      | 4765                      |
| 25                 | M.                | 16. 16                    | 16. 9                          | 59. 42                      | 59. 15                          | 4793                      | 4826                      |
| 26                 | Tu.               | 16. 1                     | 15. 53                         | 58. 47                      | 58. 19                          | 4850                      | 4895                      |
| 27                 | W.                | 15. 46                    | 15. 38                         | 57. 51                      | 57. 22                          | 4930                      | 4966                      |
| 28                 | Th.               | 15. 30                    | 15. 24                         | 56. 55                      | 56. 29                          | 5000                      | 5033                      |
| 29                 | F.                | 15. 17                    | 15. 11                         | 56. 5                       | 55. 43                          | 5064                      | 5093                      |
| 30                 | Sa.               | 15. 5                     | 15. 1                          | 55. 23                      | 55. 5                           | 5119                      | 5142                      |
| 31                 | Sa.               | 14. 57                    | 14. 53                         | 54. 50                      | 54. 38                          | 5162                      | 5178                      |

| [80] JULY 1774.                                                                   |                         |             |            |             |            |
|-----------------------------------------------------------------------------------|-------------------------|-------------|------------|-------------|------------|
| Distances of $\gamma$ 's Center from $\odot$ , and from Stars east of $\perp$ er. |                         |             |            |             |            |
| Days.                                                                             | Stars Names.            | Noon.       | 3 Hours.   | 6 Hours.    | 9 Hours.   |
|                                                                                   |                         | D. M. S.    | D. M. S.   | D. M. S.    | D. M. S.   |
| 1                                                                                 | The Sun.                | 81. 42. 23  | 80. 15. 48 | 78. 49. 30  | 77. 23. 28 |
| 2                                                                                 |                         | 70. 17. 20  | 68. 52. 50 | 67. 28. 33  | 66. 4. 29  |
| 3                                                                                 |                         | 59. 7. 8    | 57. 44. 12 | 56. 21. 26  | 54. 58. 49 |
| 4                                                                                 |                         | 48. 7. 58   | 46. 46. 11 | 45. 24. 30  | 44. 2. 56  |
| 5                                                                                 |                         |             |            |             |            |
| 10                                                                                | Spica $\alpha$          | 74. 40. 33  | 73. 10. 27 | 71. 40. 16  | 70. 9. 59  |
| 11                                                                                |                         | 62. 36. 53  | 61. 5. 53  | 59. 34. 43  | 58. 3. 26  |
| 12                                                                                |                         | 50. 25. 4   | 48. 52. 57 | 47. 20. 40  | 45. 48. 14 |
| 13                                                                                |                         | 38. 3. 55   | 36. 30. 36 | 34. 57. 8   | 33. 23. 32 |
| 14                                                                                |                         | 25. 34. 0   | 23. 59. 59 | 22. 25. 59  | 20. 52. 2  |
| 15                                                                                | Antares.                | 58. 43. 21  | 57. 6. 45  | 55. 29. 56  | 53. 52. 54 |
| 16                                                                                |                         | 45. 44. 43  | 44. 6. 30  | 42. 28. 6   | 40. 49. 35 |
| 17                                                                                |                         | 32. 36. 14  | 30. 57. 47 | 29. 19. 29  | 27. 41. 28 |
| 18                                                                                | $\alpha$ Aquilæ.        | 69. 48. 33  | 68. 13. 49 | 66. 39. 4   | 65. 4. 21  |
| 19                                                                                |                         | 57. 12. 27  | 55. 38. 49 | 54. 5. 34   | 52. 32. 46 |
| 20                                                                                | $\rho$ Capri-<br>corni. | 42. 19. 39  | 40. 27. 57 | 38. 36. 3   | 36. 43. 56 |
| 21                                                                                |                         | 27. 20. 54  | 25. 27. 55 | 23. 34. 50  | 21. 41. 41 |
| 22                                                                                | $\alpha$ Pegasi.        | 61. 58. 51  | 60. 14. 25 | 58. 30. 22  | 56. 46. 46 |
| 23                                                                                |                         | 48. 17. 28  | 46. 37. 48 | 44. 59. 5   | 43. 21. 30 |
| 24                                                                                |                         | 35. 33. 34  |            |             |            |
| 24                                                                                | $\alpha$ Arietis.       | 75. 49. 15  | 74. 2. 28  | 72. 16. 4   | 70. 30. 5  |
| 25                                                                                |                         | 61. 46. 57  | 60. 3. 47  | 58. 21. 11  | 56. 39. 8  |
| 26                                                                                |                         | 48. 18. 9   | 46. 39. 58 | 45. 2. 31   | 43. 25. 52 |
| 27                                                                                |                         | 35. 35. 42  |            |             |            |
| 27                                                                                | Aldeba-<br>ran.         | 65. 56. 17  | 64. 15. 51 | 62. 35. 51  | 60. 56. 17 |
| 28                                                                                |                         | 52. 44. 40  | 51. 7. 34  | 49. 30. 50  | 47. 54. 29 |
| 29                                                                                |                         | 39. 58. 1   | 38. 23. 43 | 36. 49. 44  | 35. 16. 4  |
| 30                                                                                |                         | 27. 32. 18  |            |             |            |
| 27                                                                                | The Sun.                | 111. 29. 53 | 110. 0. 7  | 108. 36. 54 | 107. 4. 43 |
| 28                                                                                |                         | 99. 41. 49  | 98. 14. 50 | 96. 48. 9   | 95. 21. 47 |
| 29                                                                                |                         | 88. 14. 26  | 86. 49. 45 | 85. 25. 18  | 84. 1. 5   |
| 30                                                                                |                         | 77. 3. 18   | 75. 40. 19 | 74. 17. 30  | 72. 54. 49 |
| 31<br>A.1                                                                         |                         | 66. 3. 39   |            |             |            |

J U L Y 1774.

[81]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.       | 12 Hours.   | 15 Hours.  | 18 Hours.   | 21 Hours.  |
|-------|--------------------|-------------|------------|-------------|------------|
|       |                    | D. M. S.    | D. M. S.   | D. M. S.    | D. M. S.   |
| 1     | The Sun.           | 75. 57. 44  | 74. 32. 16 | 73. 7. 2    | 71. 42. 4  |
| 2     |                    | 64. 40. 37  | 63. 16. 58 | 61. 53. 30  | 60. 30. 14 |
| 3     |                    | 53. 36. 22  | 52. 14. 4  | 50. 51. 54  | 49. 29. 52 |
| 4     |                    | 42. 41. 29  | 41. 20. 8  | 39. 58. 52  |            |
| 10    | Spica 𐌸            | 68. 39. 36  | 67. 9. 5   | 65. 38. 28  | 64. 7. 44  |
| 11    |                    | 55. 32. 1   | 55. 0. 29  | 53. 28. 50  | 51. 57. 1  |
| 12    |                    | 44. 15. 40  | 42. 42. 57 | 41. 10. 5   | 39. 37. 4  |
| 13    |                    | 31. 49. 50  | 30. 15. 59 | 28. 42. 2   | 27. 8. 2   |
| 14    | Antares.           | 19. 18. 7   |            |             |            |
| 14    |                    | 65. 7. 18   | 63. 31. 42 | 61. 55. 50  | 60. 19. 43 |
| 15    |                    | 52. 15. 39  | 50. 38. 12 | 49. 0. 34   | 47. 22. 44 |
| 16    |                    | 39. 10. 58  | 37. 32. 15 | 35. 53. 30  | 34. 14. 50 |
| 17    | α Aquilæ.          | 26. 3. 45   |            |             |            |
| 17    |                    | 76. 6. 24   | 74. 32. 11 | 72. 57. 46  | 71. 23. 13 |
| 18    |                    | 63. 29. 42  | 61. 55. 5  | 60. 20. 39  | 58. 46. 25 |
| 19    | β Capri-<br>corni. | 51. 0. 28   |            |             |            |
| 19    |                    | 49. 43. 53  | 47. 53. 14 | 46. 2. 19   | 44. 11. 7  |
| 20    |                    | 34. 51. 38  | 32. 59. 10 | 31. 6. 32   | 29. 13. 46 |
| 21    | α Pegasi.          | 19. 48. 29  |            |             |            |
| 21    |                    | 68. 59. 19  | 67. 13. 54 | 65. 28. 39  | 63. 43. 57 |
| 22    |                    | 55. 3. 40   | 53. 21. 6  | 51. 39. 9   | 49. 57. 58 |
| 23    | α Arietis.         | 41. 45. 3   | 40. 9. 56  | 38. 36. 15  | 37. 4. 5   |
| 24    |                    | 68. 44. 32  | 66. 59. 25 | 65. 14. 47  | 63. 30. 37 |
| 25    |                    | 54. 57. 40  | 53. 16. 48 | 51. 36. 35  | 49. 57. 2  |
| 26    | Aldeba-<br>ran.    | 41. 50. 2   | 40. 15. 4  | 38. 41. 0   | 37. 7. 52  |
| 27    |                    | 59. 17. 8   | 57. 35. 24 | 56. 0. 5    | 54. 22. 10 |
| 28    |                    | 46. 18. 30  | 44. 42. 52 | 43. 7. 35   | 41. 32. 38 |
| 29    | The Sun.           | 33. 42. 43  | 32. 9. 40  | 30. 36. 55  | 29. 4. 28  |
| 27    |                    | 117. 32. 57 | 116. 1. 35 | 114. 30. 37 | 113. 0. 3  |
| 28    |                    | 105. 33. 3  | 104. 4. 44 | 102. 36. 46 | 101. 9. 7  |
| 29    |                    | 93. 55. 43  | 92. 29. 58 | 91. 4. 32   | 89. 39. 22 |
| 30    |                    | 82. 37. 6   | 81. 13. 21 | 79. 49. 48  | 78. 26. 27 |
| 31    |                    | 71. 32. 18  | 70. 9. 54  | 68. 47. 39  | 67. 25. 34 |



Distances of  $\beta$ 's Center from  $\odot$ , and from Stars west of her.

| Days | Stars Names.        | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.   |
|------|---------------------|-------------|-------------|-------------|------------|
|      |                     | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.   |
| 1    | Fomalhaut.          | 49. 25. 57  | 50. 47. 43  | 52. 9. 43   | 53. 31. 51 |
| 2    |                     | 60. 24. 48  | 61. 47. 40  | 63. 10. 34  | 64. 33. 31 |
| 3    |                     | 71. 28. 22  | 72. 51. 19  | 74. 14. 15  | 75. 37. 9  |
| 4    | $\alpha$ Pegasi.    | 67. 29. 51  | 68. 53. 6   | 70. 16. 22  | 71. 39. 40 |
| 5    |                     | 78. 36. 27  | 79. 59. 50  | 81. 23. 13  | 82. 46. 36 |
| 6    | Arietis.            | 46. 6. 21   | 47. 30. 6   | 48. 54. 4   | 50. 18. 14 |
| 7    |                     | 57. 21. 38  |             |             |            |
| 12   | The Sun.            | 40. 12. 42  | 41. 37. 44  | 43. 2. 59   | 44. 28. 26 |
| 13   |                     | 51. 38. 57  | 53. 5. 44   | 54. 32. 45  | 56. 0. 1   |
| 14   |                     | 63. 20. 5   | 64. 48. 53  | 66. 17. 58  | 67. 47. 19 |
| 15   |                     | 75. 18. 19  | 76. 49. 26  | 78. 20. 52  | 79. 52. 37 |
| 16   |                     | 87. 36. 5   | 89. 9. 48   | 90. 43. 52  | 92. 18. 16 |
| 17   |                     | 100. 15. 29 | 101. 52. 2  | 103. 28. 57 | 105. 6. 13 |
| 18   |                     | 113. 17. 47 | 115. 57. 10 | 116. 36. 54 | 118. 17. 0 |
| 16   | Regulus.            | 54. 49. 10  | 56. 30. 1   | 58. 11. 35  | 59. 53. 17 |
| 17   |                     | 68. 27. 5   | 70. 10. 53  | 71. 55. 6   | 73. 39. 41 |
| 18   | Spica $\mu$         | 29. 13. 37  | 30. 58. 43  | 32. 44. 22  | 34. 30. 31 |
| 19   |                     | 43. 27. 49  | 45. 16. 27  | 47. 5. 28   | 48. 54. 50 |
| 20   |                     | 58. 6. 16   | 59. 57. 24  | 61. 48. 47  | 63. 40. 24 |
| 21   |                     | 73. 1. 10   |             |             |            |
| 21   | Antares.            | 28. 24. 21  | 30. 10. 46  | 31. 57. 51  | 33. 45. 33 |
| 22   |                     | 42. 50. 59  | 44. 40. 57  | 46. 31. 4   | 48. 21. 20 |
| 23   |                     | 57. 32. 57  | 59. 23. 8   | 61. 13. 11  | 63. 3. 6   |
| 24   |                     | 72. 9. 34   |             |             |            |
| 24   | $\beta$ Capricorni. | 17. 45. 6   | 19. 35. 12  | 21. 24. 58  | 23. 14. 24 |
| 25   |                     | 32. 16. 17  | 34. 3. 33   | 35. 50. 24  | 37. 36. 51 |
| 26   |                     | 46. 22. 39  |             |             |            |
| 26   | $\alpha$ Aquilæ.    | 54. 52. 7   | 56. 20. 42  | 57. 49. 24  | 59. 18. 13 |
| 27   |                     | 66. 42. 52  | 68. 11. 38  | 69. 40. 16  | 71. 8. 46  |
| 28   |                     | 78. 28. 23  |             |             |            |
| 28   | Fomalhaut.          | 45. 51. 4   | 47. 14. 2   | 48. 37. 18  | 50. 0. 50  |
| 29   |                     | 57. 1. 15   | 58. 25. 37  | 59. 50. 0   | 61. 14. 25 |
| 30   |                     | 68. 15. 46  | 69. 30. 52  | 71. 3. 54   | 72. 27. 52 |
| 31   | $\alpha$ Pegasi.    | 64. 32. 18  | 65. 55. 58  | 67. 19. 36  | 68. 43. 15 |
| A. 1 |                     | 75. 41. 7   |             |             |            |

JULY 1774.

[83]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

| Days. | Stars Names.        | 12 Hours.   | 15 Hours.   | 18 Hours.  | 21 Hours.   |
|-------|---------------------|-------------|-------------|------------|-------------|
|       |                     | D. M. S.    | D. M. S.    | D. M. S.   | D. M. S.    |
| 1     | Fomalhaut.          | 54. 54. 11  | 56. 16. 40  | 57. 39. 17 | 59. 2. 0    |
| 2     |                     | 65. 56. 29  | 67. 19. 27  | 68. 42. 26 | 70. 5. 24   |
| 3     |                     | 77. 0. 1    |             |            |             |
| 3     | $\alpha$ Pegasi.    | 61. 57. 8   | 63. 20. 16  | 64. 43. 26 | 66. 6. 38   |
| 4     |                     | 73. 2. 59   | 74. 26. 20  | 75. 49. 41 | 77. 13. 4   |
| 5     |                     | 84. 9. 59   |             |            |             |
| 5     | $\alpha$ Arietis.   | 40. 33. 51  | 41. 56. 34  | 43. 19. 34 | 44. 42. 50  |
| 6     |                     | 51. 42. 36  | 53. 7. 8    | 54. 31. 50 | 55. 56. 40  |
| 12    | The Sun.            | 45. 54. 6   | 47. 19. 59  | 48. 46. 5  | 50. 12. 24  |
| 13    |                     | 57. 27. 31  | 58. 55. 16  | 60. 23. 17 | 61. 51. 33  |
| 14    |                     | 69. 16. 57  | 70. 46. 51  | 72. 17. 2  | 73. 47. 31  |
| 15    |                     | 81. 24. 41  | 82. 57. 2   | 84. 29. 43 | 86. 2. 44   |
| 16    |                     | 93. 53. 1   | 95. 28. 6   | 97. 3. 32  | 98. 39. 19  |
| 17    |                     | 106. 43. 51 | 108. 21. 48 | 110. 0. 6  | 111. 38. 46 |
| 18    |                     | 119. 57. 27 |             |            |             |
| 16    | Regulus.            | 61. 35. 20  | 63. 17. 44  | 65. 0. 29  | 66. 43. 35  |
| 17    |                     | 75. 24. 39  |             |            |             |
| 17    | Spica $\mu$         | 22. 19. 6   | 24. 1. 47   | 25. 45. 7  | 27. 29. 4   |
| 18    |                     | 36. 17. 9   | 38. 4. 12   | 39. 51. 40 | 41. 39. 33  |
| 19    |                     | 50. 44. 31  | 52. 34. 31  | 54. 24. 49 | 56. 15. 24  |
| 20    |                     | 65. 32. 12  | 67. 24. 12  | 69. 16. 22 | 71. 8. 41   |
| 21    | Antares.            | 35. 33. 48  | 37. 22. 32  | 39. 11. 41 | 41. 1. 12   |
| 22    |                     | 50. 11. 40  | 52. 2. 0    | 53. 52. 21 | 55. 42. 41  |
| 23    |                     | 64. 52. 51  | 66. 42. 24  | 68. 31. 43 | 70. 20. 47  |
| 24    | $\beta$ Capricorni. | 25. 3. 30   | 26. 52. 15  | 28. 40. 3  | 30. 28. 39  |
| 25    |                     | 39. 22. 53  | 41. 8. 30   | 42. 53. 40 | 44. 38. 23  |
| 26    | $\alpha$ Aquilæ.    | 60. 47. 8   | 62. 16. 5   | 63. 45. 3  | 65. 13. 59  |
| 27    |                     | 72. 37. 7   | 74. 5. 16   | 75. 33. 13 | 77. 0. 56   |
| 28    | Fomalhaut.          | 51. 24. 36  | 52. 48. 34  | 54. 12. 40 | 55. 36. 54  |
| 29    |                     | 62. 38. 48  | 64. 3. 6    | 65. 27. 23 | 66. 51. 36  |
| 30    |                     | 73. 51. 45  |             |            |             |
| 30    | $\alpha$ Pegasi.    | 58. 57. 42  | 60. 21. 20  | 61. 44. 59 | 63. 8. 38   |
| 31    |                     | 70. 6. 55   | 71. 30. 29  | 72. 54. 2  | 74. 17. 35  |

[84]

J U L Y 1774.

Configurations of the SATELLITES of JUPITER at  
2 o' th' Clock in the Morning.

|    |     |     |       |    |   |          |
|----|-----|-----|-------|----|---|----------|
| 1  |     | 2.  | 1.    | 3. | ⊙ | 4.       |
| 2  | 2.0 |     |       |    | ⊙ | 4. 1. 3. |
| 3  |     |     | 4.    | 1. | ⊙ | 2. 3.    |
| 4  |     | 4.  |       | 2. | ⊙ | 1. 3.    |
| 5  | 4.  |     | 2.    | 3. | ⊙ | 1.0      |
| 6  | 4.  | 3.  |       | 1. | ⊙ | 2.       |
| 7  | 4.  | 3.  |       |    | ⊙ | 1. 2.    |
| 8  | 4.  |     | 2.    | 3. | ⊙ | 1.       |
| 9  |     | 4.  |       | 2. | ⊙ | 1. 3.    |
| 10 |     |     | 4.    | 1. | ⊙ | 2. 3.    |
| 11 | 4.0 |     |       | 2. | ⊙ | 1. 3.    |
| 12 | 3●  |     | 2.    | 1. | ⊙ | 4.       |
| 13 | 1●  |     | 3.    |    | ⊙ | 2. 4.    |
| 14 |     | 3.  |       |    | ⊙ | 1. 2. 4. |
| 15 |     |     | 3.    | 1. | ⊙ | 4.       |
| 16 |     |     |       | 2. | ⊙ | 3. 1. 4. |
| 17 |     |     | 1.    |    | ⊙ | 2. 3. 4. |
| 18 | 2●  |     |       |    | ⊙ | 1. 4. 3. |
| 19 |     | 2.  | 1.    |    | ⊙ | 3 4      |
| 20 | 1●  |     | 3. 4. |    | ⊙ | 2.       |
| 21 |     | 3 4 |       |    | ⊙ | 1. 2.    |
| 22 | 4.  |     | 3. 2. | 1. | ⊙ |          |
| 23 | 4.  |     |       | 2. | ⊙ | 3. 1.    |
| 24 | 4.  |     |       | 1. | ⊙ | 2. 3.    |
| 25 | 4.  |     |       |    | ⊙ | 1. 3. 2● |
| 26 |     | 4.  | 2.    | 1. | ⊙ | 3.       |
| 27 |     |     | 3. 4. |    | ⊙ | 2. 1.    |
| 28 | 1.0 |     | 3.    |    | ⊙ | 4. 2.    |
| 29 |     | 3.  |       | 2. | ⊙ | 1. 4.    |
| 30 | 3.0 |     | 2.    |    | ⊙ | 1. 4.    |
| 31 |     |     | 1.    |    | ⊙ | 2. 3. 4. |



| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.     | Phases of the Moon.                      |
|--------------------|-------------------|----------------------------|------------------------------------------|
|                    |                   |                            | D. H. M.                                 |
| 1                  | M.                | Lammas-day.                | New Moon — 6. 23. 56                     |
| 2                  | Tu.               |                            | First Quarter — 14. 11. 35               |
| 3                  | W.                |                            | Full Moon — 21. 2. 51                    |
| 4                  | Th.               |                            | Last Quarter — 28. 12. 26                |
| 5                  | F.                |                            |                                          |
| 6                  | Sa.               | Transfig. of our Lord.     | Other Phenomena.                         |
| 7                  | Su.               | 10th Sunday after Trinity. | D.                                       |
| 8                  | M.                | [Name of Jesus.            | 1. ♀ μ II diff. Lat. 32'.                |
| 9                  | Tu.               |                            | ♄ 1 ad ♄ 8 <sup>h</sup> . 59'.           |
| 10                 | W.                | S. Lawrence.               | ♄ 2 ad ♄ 8 <sup>h</sup> . 30'.           |
| 11                 | Th.               | Prs. of Brunswick born.    | ♄ α 8 <sup>h</sup> . 53'.                |
| 12                 | F.                | Pr. of Wales born 1762.    | 4. ♀ Stationary.                         |
| 13                 | Sa.               |                            | 9. ♄ τ Ω 16 <sup>h</sup> . 26'.          |
| 14                 | Su.               | 11th Sunday after Trinity. | 10. ♄ β ♄ 2 <sup>h</sup> . 58'.          |
| 15                 | M.                |                            | ♄ η ♄ 17 <sup>h</sup> . 23'.             |
| 16                 | Tu.               | Pr. Frederick born.        | 11. ♄ θ ♄ 18 <sup>h</sup> . 3'.          |
| 17                 | W.                |                            | 12. ♄ κ ♄ 23 <sup>h</sup> . 18'.         |
| 18                 | Th.               |                            | 13. ♀ δ II diff. Lat. 34'.               |
| 19                 | F.                |                            | 14. ♄ γ ♄ 11 <sup>h</sup> . 22'.         |
| 20                 | Sa.               |                            | ♄ η ♄ 15 <sup>h</sup> . 12'.             |
| 21                 | Su.               | 12th Su. after Tr. Pr. W.  | ♄ ↓ ♄ 20 <sup>h</sup> . 22'.             |
| 22                 | M.                | [Hen. born.                | 15. ♄ φ Serpentar. 10 <sup>h</sup> . 9'. |
| 23                 | Tu.               |                            | 19. ♄ β ♄ 5 <sup>h</sup> . 31'.          |
| 24                 | W.                | St. Bartholomew.           | 21. ♄ λ ♄ 7 <sup>h</sup> . 29'.          |
| 25                 | Th.               |                            | 22. ♄ φ ♄ 4 <sup>h</sup> . 56'.          |
| 26                 | F.                |                            | ☉ enters ♄ at 16 <sup>h</sup> . 6'.      |
| 27                 | Sa.               |                            | 24. ♀ ο Ω diff. Lat. 56'.                |
| 28                 | Su.               | 13th Su. after Tr. S. Aug. | 27. ♀ Stationary.                        |
| 29                 | M.                | Beheading of St. John      | 28. ♄ γ 8 <sup>h</sup> . 28'.            |
| 30                 | Tu.               | [Bapt.                     | ♄ 1 ad ♄ 8 <sup>h</sup> . 35'.           |
| 31                 | W.                |                            | ♄ 2 ad ♄ 8 <sup>h</sup> . 6'.            |
|                    |                   |                            | ♄ α 8 <sup>h</sup> . 25'.                |
|                    |                   |                            | 30. ♀ δ ♄ diff. Lat. 6'.                 |
|                    |                   |                            | 31. ♀ δ II diff. Lat. 49'.               |

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| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time Add. | Diff. |
|--------------------|-------------------|------------------|---------------------------|----------------------|---------------------|-------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.               | S.    |
| 1                  | M.                | 4. 9. 10. 17     | 8.46.26,8                 | 17. 58. 54           | 5. 51,5             | 3,8   |
| 2                  | Tu.               | 4. 10. 7. 45     | 8.50.19,5                 | 17. 43. 34           | 5. 47,7             | 4,4   |
| 3                  | W.                | 4. 11. 5. 15     | 8.54.11,8                 | 17. 27. 56           | 5. 43,3             | 4,9   |
| 4                  | Th.               | 4. 12. 2. 46     | 8.58. 3,3                 | 17. 12. 0            | 5. 38,4             | 5,5   |
| 5                  | F.                | 4. 13. 0. 19     | 9. 1.54,4                 | 16. 55. 48           | 5. 32,9             | 6,1   |
| 6                  | Sa.               | 4. 13. 57. 52    | 9. 5.44,8                 | 16. 39. 20           | 5. 26,8             | 6,7   |
| 7                  | Su.               | 4. 14. 55. 27    | 9. 9.34,6                 | 16. 22. 35           | 5. 20,1             | 7,3   |
| 8                  | M.                | 4. 15. 53. 3     | 9.13.23,9                 | 16. 5. 35            | 5. 12,8             | 7,9   |
| 9                  | Tu.               | 4. 16. 50. 39    | 9.17.12,5                 | 15. 48. 19           | 5. 4,9              | 8,5   |
| 10                 | W.                | 4. 17. 48. 17    | 9.21. 0,6                 | 15. 30. 47           | 4. 56,4             | 9,0   |
| 11                 | Th.               | 4. 18. 45. 56    | 9.24.48,1                 | 15. 13. 1            | 4. 47,4             | 9,6   |
| 12                 | F.                | 4. 19. 43. 36    | 9.28.35,0                 | 14. 55. 0            | 4. 37,8             | 10,2  |
| 13                 | Sa.               | 4. 20. 41. 17    | 9.32.21,3                 | 14. 36. 45           | 4. 27,6             | 10,8  |
| 14                 | Su.               | 4. 21. 38. 58    | 9.36. 7,1                 | 14. 18. 17           | 4. 16,8             | 11,3  |
| 15                 | M.                | 4. 22. 36. 41    | 9.39.52,3                 | 13. 59. 35           | 4. 5,5              | 11,8  |
| 16                 | Tu.               | 4. 23. 34. 24    | 9.43.37,0                 | 13. 40. 38           | 3. 53,7             | 12,4  |
| 17                 | W.                | 4. 24. 32. 9     | 9.47.21,1                 | 13. 21. 29           | 3. 41,3             | 13,0  |
| 18                 | Th.               | 4. 25. 29. 55    | 9.51. 4,7                 | 13. 2. 8             | 3. 28,3             | 13,4  |
| 19                 | F.                | 4. 26. 27. 42    | 9.54.47,8                 | 12. 42. 34           | 3. 14,9             | 13,9  |
| 20                 | Sa.               | 4. 27. 25. 30    | 9.58.30,4                 | 12. 22. 48           | 3. 1,0              | 14,4  |
| 21                 | Su.               | 4. 28. 23. 19    | 10. 2.12,5                | 12. 2. 51            | 2. 46,6             | 14,9  |
| 22                 | M.                | 4. 29. 21. 10    | 10. 5.54,1                | 11. 42. 42           | 2. 31,7             | 15,3  |
| 23                 | Tu.               | 5. 0. 19. 3      | 10. 9.35,3                | 11. 22. 22           | 2. 16,4             | 15,7  |
| 24                 | W.                | 5. 1. 16. 57     | 10.13.16,1                | 11. 1. 50            | 2. 0,7              | 16,1  |
| 25                 | Th.               | 5. 2. 14. 53     | 10.16.56,5                | 10. 41. 9            | 1. 44,6             | 16,6  |
| 26                 | F.                | 5. 3. 12. 50     | 10.20.36,5                | 10. 20. 17           | 1. 28,0             | 16,9  |
| 27                 | Sa.               | 5. 4. 10. 50     | 10.24.16,1                | 9. 59. 15            | 1. 11,1             | 17,2  |
| 28                 | Su.               | 5. 5. 8. 51      | 10.27.55,4                | 9. 38. 3             | 0. 53,9             | 17,5  |
| 29                 | M.                | 5. 6. 6. 55      | 10.31.34,3                | 9. 16. 42            | 0. 36,4             | 17,9  |
| 30                 | Tu.               | 5. 7. 5. 0       | 10.35.12,9                | 8. 55. 13            | 0. 18,5             | 18,2  |
| 31                 | W.                | 5. 8. 3. 8       | 10.38.51,3                | 8. 33. 34            | 0. 0,3              | --    |

| Days. | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|-------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|       | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1     | 15. 49, 0                        | 1. 6, 5                                            | 2. 23, 6                           | 0. 006238                              | 5. 14. 50                       |
| 7     | 15. 49, 9                        | 1. 6, 0                                            | 2. 23, 9                           | 0. 005846                              | 5. 14. 31                       |
| 13    | 15. 51, 0                        | 1. 5, 5                                            | 2. 24, 3                           | 0. 005368                              | 5. 14. 12                       |
| 19    | 15. 52, 2                        | 1. 5, 1                                            | 2. 24, 6                           | 0. 004828                              | 5. 13. 53                       |
| 25    | 15. 53, 3                        | 1. 4, 7                                            | 2. 25, 0                           | 0. 004256                              | 5. 13. 34                       |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite.<br>Immersion. |            | II. Satellite. |              | III. Satellite.      |                 |
|-----------------------------|------------|----------------|--------------|----------------------|-----------------|
| Days                        | H. M. S.   | Days           | H. M. S.     | Days                 | H. M. S.        |
| 2                           | 16. 52. 55 | 4              | 4. 37. 48 I  | 1                    | 21. 14. 51 I    |
| 4                           | 11. 21. 28 | 4              | 6. 55. 52 E  | 1                    | 22. 53. 53 E    |
| 6                           | 5. 50. 5   | 7              | 17. 56. 40 I | 9                    | 1. 16. 14 I     |
| 8                           | 0. 18. 45  | 7              | 20. 14. 41 E | 9                    | 2. 54. 27 E     |
| 9                           | 18. 47. 23 | 11             | 7. 15. 37 I  | 16                   | 5. 18. 4 I      |
| 11                          | 13*16. 6   | 11             | 9. 33. 35 E  | 16                   | 6. 55. 31 E     |
| 13                          | 7. 44. 51  | 14             | 20. 34. 39 I | 23                   | 9. 20. 24 I     |
| 15                          | 2. 13. 34  | 14             | 22. 52. 35 E | 23                   | 10*57. 4 E      |
| 16                          | 20. 42. 23 | 18             | 9. 53. 54 I  | 30                   | 13*22. 57 I     |
| 18                          | 15*11. 12  | 21             | 23. 13. 19 I | 30                   | 14*59. 2 E      |
| 20                          | 9. 40. 0   | 25             | 12*32. 39 I  | IV. Satellite. Conj. |                 |
| 22                          | 4. 8. 53   | 29             | 1. 52. 14 I  |                      |                 |
| 23                          | 22. 37. 48 |                |              | 4                    | 2. 33. 3 Sup.   |
| 25                          | 17. 6. 40  |                |              | 12                   | 11*40. 37 Inf.  |
| 27                          | 11*35. 37  |                |              | 20                   | 20. 48. 58 Sup. |
| 29                          | 6. 4. 34   |                |              | 29                   | 5. 58. 3 Inf.   |
| 31                          | 0. 33. 33  |                |              |                      |                 |



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| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric La-<br>titude. | Decli-<br>nation. | Passage<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|---------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                     |

MERCURY. Inf.  $\delta$  18<sup>d</sup>. 4<sup>h</sup>.

|    |            |         |          |         |         |        |
|----|------------|---------|----------|---------|---------|--------|
| 1  | 9. 0. 25   | 4. 55 S | 5. 2. 53 | 3. 10 S | 7. 30 N | 1. 28  |
| 7  | 9. 17. 51  | 6. 11   | 5. 3. 2  | 4. 14   | 6. 27   | 1. 4   |
| 13 | 10. 6. 58  | 6. 54   | 5. 0. 3  | 4. 44   | 7. 2    | 0. 29  |
| 19 | 10. 28. 48 | 6. 49   | 4. 25. 0 | 4. 16   | 9. 11   | 23. 43 |
| 25 | 11. 24. 39 | 5. 27   | 4. 21. 0 | 2. 48   | 11. 51  | 23. 8  |

VENUS.

|    |           |         |           |         |         |        |
|----|-----------|---------|-----------|---------|---------|--------|
| 1  | 1. 1. 28  | 2. 19 S | 3. 1. 10  | 1. 26 S | 22. 1 N | 21. 20 |
| 7  | 1. 11. 4  | 1. 52   | 3. 8. 10  | 1. 7    | 22. 6   | 21. 27 |
| 13 | 1. 20. 42 | 1. 23   | 3. 15. 12 | 0. 48   | 21. 48  | 21. 34 |
| 19 | 2. 0. 20  | 0. 50   | 3. 22. 17 | 0. 28   | 21. 10  | 21. 42 |
| 25 | 2. 9. 59  | 0. 16   | 3. 29. 25 | 0. 9    | 20. 9   | 21. 51 |

MARS.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 1. 28. 11 | 0. 19 N | 2. 25. 49 | 0. 14 N | 23. 38 N | 20. 55 |
| 7  | 2. 1. 23  | 0. 25   | 2. 29. 48 | 0. 19   | 23. 47   | 20. 49 |
| 13 | 2. 4. 34  | 0. 31   | 3. 3. 45  | 0. 23   | 23. 48   | 20. 43 |
| 19 | 2. 7. 42  | 0. 37   | 3. 7. 39  | 0. 28   | 23. 43   | 20. 38 |
| 25 | 2. 10. 49 | 0. 43   | 3. 11. 30 | 0. 32   | 23. 30   | 20. 32 |

JUPITER.  $\square$  6<sup>d</sup>. 21<sup>h</sup>.

|    |          |         |           |         |          |        |
|----|----------|---------|-----------|---------|----------|--------|
| 1  | 1. 2. 31 | 1. 12 S | 1. 14. 15 | 1. 12 S | 14. 59 N | 18. 0  |
| 7  | 1. 3. 3  | 1. 12   | 1. 14. 50 | 1. 14   | 15. 8    | 17. 39 |
| 13 | 1. 3. 36 | 1. 12   | 1. 15. 19 | 1. 15   | 15. 15   | 17. 18 |
| 19 | 1. 4. 9  | 1. 11   | 1. 15. 41 | 1. 16   | 15. 20   | 16. 57 |
| 25 | 1. 4. 42 | 1. 11   | 1. 15. 57 | 1. 17   | 15. 24   | 16. 36 |

SATURN.

|    |           |         |           |        |         |       |
|----|-----------|---------|-----------|--------|---------|-------|
| 1  | 5. 27. 36 | 2. 17 N | 5. 23. 20 | 2. 8 N | 4. 36 N | 2. 52 |
| 7  | 5. 27. 49 | 2. 18   | 5. 23. 57 | 2. 7   | 4. 21   | 2. 31 |
| 13 | 5. 28. 1  | 2. 18   | 5. 24. 36 | 2. 7   | 4. 5    | 2. 11 |
| 19 | 5. 28. 13 | 2. 18   | 5. 25. 16 | 2. 6   | 3. 49   | 1. 51 |
| 25 | 5. 28. 25 | 2. 18   | 5. 25. 58 | 2. 6   | 3. 32   | 1. 31 |

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| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D.M.S.                   |
| 1                  | M.                | 2. 3. 12. 43              | 2. 9. 10. 19                  | 5. 6. 27 S               | 5.10.35 S                |
| 2                  | Tu.               | 2. 15. 6. 45              | 2. 21. 2. 40                  | 5. 11. 23                | 5. 8.50                  |
| 3                  | W.                | 2. 26. 58. 22             | 3. 2. 54. 17                  | 5. 3. 0                  | 4.53.53                  |
| 4                  | Th.               | 3. 8. 50. 48              | 3. 14. 48. 11                 | 4. 41. 36                | 4.26.10                  |
| 5                  | F.                | 3. 20. 46. 41             | 3. 26. 46. 43                 | 4. 7. 50                 | 3.46.39                  |
| 6                  | Sa.               | 4. 2. 48. 20              | 4. 8. 51. 45                  | 3. 22. 52                | 2.56.38                  |
| 7                  | Su.               | 4. 14. 57. 19             | 4. 21. 5. 3                   | 2. 28. 12                | 1.57.54                  |
| 8                  | M.                | 4. 27. 15. 6              | 5. 3. 27. 45                  | 1. 25. 57                | 0.52.47 S                |
| 9                  | Tu.               | 5. 9. 43. 4               | 5. 15. 1. 14                  | 0. 18. 40 S              | 0.15.57 N                |
| 10                 | W.                | 5. 22. 22. 29             | 5. 28. 46. 58                 | 0. 50. 40 N              | 1.25. 5                  |
| 11                 | Th.               | 6. 5. 14. 51              | 6. 11. 46. 23                 | 1. 58. 46                | 2.31. 7                  |
| 12                 | F.                | 6. 18. 21. 45             | 6. 25. 1. 6                   | 3. 1. 54                 | 3.30.30                  |
| 13                 | Sa.               | 7. 1. 44. 39              | 7. 8. 32. 25                  | 3. 56. 31                | 4.19.31                  |
| 14                 | Su.               | 7. 15. 24. 38             | 7. 22. 21. 13                 | 4. 39. 3                 | 4.54.45                  |
| 15                 | M.                | 7. 29. 22. 13             | 8. 6. 27. 25                  | 5. 6. 12                 | 5.13. 8                  |
| 16                 | Tu.               | 8. 13. 36. 38             | 8. 20. 49. 38                 | 5. 15. 17                | 5.12.32                  |
| 17                 | W.                | 8. 28. 5. 47              | 9. 5. 24. 44                  | 5. 4. 45                 | 4.52. 0                  |
| 18                 | Th.               | 9. 12. 45. 41             | 9. 20. 7. 57                  | 4. 34. 22                | 4.12.10                  |
| 19                 | F.                | 9. 27. 30. 38             | 10. 4. 52. 54                 | 3. 45. 44                | 3.15.33                  |
| 20                 | Sa.               | 10. 12. 13. 47            | 10. 19. 32. 24                | 2. 42. 13                | 2. 6.20                  |
| 21                 | Su.               | 10. 26. 47. 55            | 11. 3. 59. 34                 | 1. 28. 38                | 0.49.53 N                |
| 22                 | M.                | 11. 11. 6. 36             | 11. 18. 8. 30                 | 0. 10. 39 N              | 0.28.13 S                |
| 23                 | Tu.               | 11. 25. 4. 59             | 0. 1. 55. 34                  | 1. 6. 14 S               | 1.42.44                  |
| 24                 | W.                | 0. 8. 40. 15              | 0. 15. 19. 1                  | 2. 17. 16                | 2.49.28                  |
| 25                 | Th.               | 0. 21. 51. 51             | 0. 28. 19. 8                  | 3. 18. 54                | 3.45.22                  |
| 26                 | F.                | 1. 4. 41. 3               | 1. 10. 58. 2                  | 4. 8. 42                 | 4.28.42                  |
| 27                 | Sa.               | 1. 17. 10. 28             | 1. 23. 19. 0                  | 4. 45. 16                | 4.58.25                  |
| 28                 | Su.               | 1. 29. 23. 56             | 2. 5. 25. 58                  | 5. 8. 3                  | 5.14.15                  |
| 29                 | M.                | 2. 11. 25. 36             | 2. 17. 23. 29                 | 5. 16. 51                | 5.16. 5                  |
| 30                 | Tu.               | 2. 23. 20. 11             | 2. 29. 16. 13                 | 5. 11. 57                | 5. 4.28                  |
| 31                 | W.                | 3. 5. 12. 5               | 3. 11. 8. 26                  | 4. 53. 46                | 4.39.52                  |

N

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| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Asc. at Midn. | D's Declinat. at Noon. | D's Declin. at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|-------------------------|------------------------|----------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                   | D. M.                  | D. M.                |
| 1                  | M.                | 25       | 20. 0                   | 62. 11                    | 68. 18                  | 15. 48 N               | 16. 44 N             |
| 2                  | Tu.               | 26       | 20. 47                  | 74. 26                    | 80. 37                  | 17. 29                 | 18. 2                |
| 3                  | W.                | 27       | 21. 34                  | 86. 49                    | 93. 3                   | 18. 23                 | 18. 32               |
| 4                  | Th.               | 28       | 22. 22                  | 99. 18                    | 105. 33                 | 18. 29                 | 18. 14               |
| 5                  | F.                | 29       | 23. 10                  | 111. 49                   | 118. 4                  | 17. 46                 | 17. 7                |
| 6                  | Sa.               | 1        | 23. 57                  | 124. 17                   | 130. 30                 | 16. 16                 | 15. 13               |
| 7                  | Su.               | 2        | 0                       | 136. 41                   | 142. 50                 | 14. 0                  | 12. 38               |
| 8                  | M.                | 3        | 0. 44                   | 148. 58                   | 155. 4                  | 11. 6                  | 9. 26                |
| 9                  | Tu.               | 4        | 1. 30                   | 161. 9                    | 167. 14                 | 7. 39                  | 5. 46                |
| 10                 | W.                | 5        | 2. 17                   | 173. 20                   | 179. 27                 | 3. 48 N                | 1. 47 N              |
| 11                 | Th.               | 6        | 3. 3                    | 185. 36                   | 191. 49                 | 0. 16 S                | 2. 20 S              |
| 12                 | F.                | 7        | 3. 51                   | 198. 6                    | 204. 28                 | 4. 24                  | 6. 26                |
| 13                 | Sa.               | 8        | 4. 41                   | 210. 57                   | 217. 34                 | 8. 24                  | 10. 16               |
| 14                 | Su.               | 9        | 5. 33                   | 224. 19                   | 231. 14                 | 12. 1                  | 13. 38               |
| 15                 | M.                | 10       | 6. 28                   | 238. 18                   | 245. 31                 | 15. 3                  | 10. 16               |
| 16                 | Tu.               | 11       | 7. 25                   | 252. 53                   | 260. 24                 | 17. 15                 | 17. 57               |
| 17                 | W.                | 12       | 8. 25                   | 268. 0                    | 275. 41                 | 18. 22                 | 18. 30               |
| 18                 | Th.               | 13       | 9. 25                   | 283. 25                   | 291. 8                  | 18. 18                 | 17. 48               |
| 19                 | F.                | 14       | 10. 25                  | 298. 49                   | 306. 25                 | 16. 59                 | 15. 54               |
| 20                 | Sa.               | 15       | 11. 23                  | 313. 55                   | 321. 17                 | 14. 33                 | 12. 59               |
| 21                 | Su.               | 16       | 12. 19                  | 328. 31                   | 335. 35                 | 11. 12                 | 9. 17                |
| 22                 | M.                | 17       | 13. 12                  | 342. 30                   | 349. 17                 | 7. 15                  | 5. 8                 |
| 23                 | Tu.               | 18       | 14. 2                   | 355. 56                   | 2. 27                   | 2. 58 S                | 0. 48 S              |
| 24                 | W.                | 19       | 14. 51                  | 8. 52                     | 15. 12                  | 1. 20 N                | 3. 25 N              |
| 25                 | Th.               | 20       | 15. 39                  | 21. 27                    | 27. 39                  | 5. 27                  | 7. 23                |
| 26                 | F.                | 21       | 16. 26                  | 33. 49                    | 39. 57                  | 9. 11                  | 10. 52               |
| 27                 | Sa.               | 22       | 17. 13                  | 46. 5                     | 52. 12                  | 12. 25                 | 13. 48               |
| 28                 | Su.               | 23       | 18. 0                   | 58. 20                    | 64. 28                  | 15. 2                  | 16. 5                |
| 29                 | M.                | 24       | 18. 47                  | 70. 38                    | 76. 49                  | 16. 57                 | 17. 37               |
| 30                 | Tu.               | 25       | 19. 34                  | 83. 1                     | 89. 14                  | 18. 6                  | 18. 23               |
| 31                 | W.                | 26       | 20. 22                  | 95. 28                    | 101. 42                 | 18. 28                 | 18. 21               |



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[91]

| Days of the Month. | Days of the Week. | Semid. D at Noon. | Semid. D at Midnight. | Hor. Par. D at Noon. | Hor. Par. D at Midnight. | Prop. Lo. at Noon. | Prop. Lo. at Midnight. |
|--------------------|-------------------|-------------------|-----------------------|----------------------|--------------------------|--------------------|------------------------|
|                    |                   | M. S.             | M. S.                 | M. S.                | M. S.                    |                    |                        |
| 1                  | M.                | 14. 51            | 14. 48                | 54. 28               | 54. 20                   | 5191               | 5202                   |
| 2                  | Tu.               | 14. 47            | 14. 46                | 54. 15               | 54. 12                   | 5209               | 5213                   |
| 3                  | W.                | 14. 45            | 14. 46                | 54. 10               | 54. 11                   | 5215               | 5214                   |
| 4                  | Th.               | 14. 47            | 14. 48                | 54. 14               | 54. 18                   | 5210               | 5205                   |
| 5                  | F.                | 14. 49            | 14. 51                | 54. 24               | 54. 32                   | 5197               | 5186                   |
| 6                  | Sa.               | 14. 54            | 14. 56                | 54. 40               | 54. 50                   | 5175               | 5162                   |
| 7                  | Su.               | 14. 59            | 15. 2                 | 55. 0                | 55. 12                   | 5149               | 5133                   |
| 8                  | M.                | 15. 6             | 15. 9                 | 55. 24               | 55. 37                   | 5118               | 5100                   |
| 9                  | Tu.               | 15. 13            | 15. 19                | 55. 51               | 56. 5                    | 5082               | 5064                   |
| 10                 | W.                | 15. 21            | 15. 25                | 56. 20               | 56. 36                   | 5045               | 5025                   |
| 11                 | Th.               | 15. 30            | 15. 34                | 56. 52               | 57. 9                    | 5004               | 4983                   |
| 12                 | F.                | 15. 39            | 15. 43                | 57. 25               | 57. 42                   | 4962               | 4941                   |
| 13                 | Sa.               | 15. 48            | 15. 53                | 58. 0                | 58. 18                   | 4918               | 4896                   |
| 14                 | Su.               | 15. 58            | 16. 3                 | 58. 36               | 58. 54                   | 4874               | 4852                   |
| 15                 | M.                | 16. 8             | 16. 12                | 59. 11               | 59. 27                   | 4831               | 4811                   |
| 16                 | Tu.               | 16. 16            | 16. 20                | 59. 42               | 59. 57                   | 4793               | 4775                   |
| 17                 | W.                | 16. 23            | 16. 26                | 60. 9                | 60. 19                   | 4760               | 4748                   |
| 18                 | Th.               | 16. 28            | 16. 29                | 60. 26               | 60. 30                   | 4740               | 4735                   |
| 19                 | F.                | 16. 29            | 16. 29                | 60. 31               | 60. 28                   | 4734               | 4737                   |
| 20                 | Sa.               | 16. 27            | 16. 24                | 60. 22               | 60. 12                   | 4745               | 4757                   |
| 21                 | Su.               | 16. 21            | 16. 16                | 59. 59               | 59. 43                   | 4772               | 4792                   |
| 22                 | M.                | 16. 11            | 16. 5                 | 59. 23               | 59. 2                    | 4816               | 4842                   |
| 23                 | Tu.               | 15. 59            | 15. 52                | 58. 38               | 58. 14                   | 4871               | 4901                   |
| 24                 | W.                | 15. 45            | 15. 38                | 57. 48               | 57. 22                   | 4933               | 4966                   |
| 25                 | Th.               | 15. 31            | 15. 24                | 56. 57               | 56. 33                   | 4998               | 5028                   |
| 26                 | F.                | 15. 18            | 15. 12                | 56. 10               | 55. 48                   | 5058               | 5086                   |
| 27                 | Sa.               | 15. 7             | 15. 2                 | 55. 29               | 55. 11                   | 5111               | 5134                   |
| 28                 | Su.               | 14. 58            | 14. 55                | 54. 57               | 54. 44                   | 5153               | 5170                   |
| 29                 | M.                | 14. 52            | 14. 50                | 54. 34               | 54. 27                   | 5183               | 5193                   |
| 30                 | Tu.               | 14. 49            | 14. 48                | 54. 23               | 54. 19                   | 5198               | 5203                   |
| 31                 | W.                | 14. 43            | 14. 49                | 54. 20               | 54. 23                   | 5202               | 5198                   |

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.             | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|--------------------------|-------------|-------------|-------------|-------------|
|       |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | The Sun.                 | 66. 3. 39   | 64. 41. 46  | 63. 19. 58  | 61. 58. 16  |
| 2     |                          | 55. 10. 51  | 53. 49. 30  | 52. 28. 11  | 51. 6. 54   |
| 3     |                          | 44. 20. 37  | 42. 59. 21  | 41. 38. 3   | 40. 16. 43  |
| 9     | Spica $\alpha$           | 41. 0. 9    | 39. 26. 29  | 37. 52. 37  | 36. 18. 40  |
| 10    |                          | 28. 27. 41  | 26. 53. 21  | 25. 19. 3   | 23. 44. 49  |
| 11    |                          | 15. 57. 26  |             |             |             |
| 11    | Antares.                 | 61. 39. 53  | 60. 3. 56   | 58. 27. 49  | 56. 51. 34  |
| 12    |                          | 48. 48. 22  | 47. 11. 24  | 45. 34. 21  | 43. 57. 14  |
| 13    |                          | 35. 51. 30  | 34. 14. 32  | 32. 37. 45  | 31. 1. 13   |
| 14    | $\alpha$ Aquilæ.         | 73. 4. 37   | 71. 32. 20  | 70. 0. 4    | 68. 27. 49  |
| 15    |                          | 60. 47. 46  | 59. 16. 16  | 57. 45. 2   | 56. 14. 8   |
| 16    |                          | 48. 46. 43  |             |             |             |
| 16    | $\beta$ Capri-<br>corni. | 47. 6. 42   | 45. 19. 15  | 43. 31. 35  | 41. 43. 44  |
| 17    |                          | 32. 41. 25  | 30. 52. 22  | 29. 3. 10   | 27. 13. 48  |
| 18    |                          | 18. 5. 2    |             |             |             |
| 18    | $\alpha$ Pegasi.         | 67. 21. 44  | 65. 39. 27  | 63. 57. 16  | 62. 15. 16  |
| 19    |                          | 53. 49. 26  | 52. 9. 26   | 50. 29. 58  | 48. 51. 6   |
| 20    |                          | 40. 48. 52  | 39. 15. 34  | 37. 43. 40  | 36. 13. 19  |
| 21    | $\alpha$ Arietis.        | 67. 47. 59  | 66. 3. 8    | 64. 18. 38  | 62. 34. 30  |
| 22    |                          | 54. 0. 13   | 52. 18. 48  | 50. 37. 58  | 48. 57. 44  |
| 23    |                          | 40. 46. 26  |             |             |             |
| 23    | Aldeba-<br>ran.          | 71. 32. 9   | 69. 48. 33  | 68. 5. 21   | 66. 22. 31  |
| 24    |                          | 57. 54. 11  | 56. 13. 41  | 54. 33. 34  | 52. 53. 51  |
| 25    |                          | 44. 41. 9   | 43. 3. 45   | 41. 26. 42  | 39. 50. 2   |
| 26    |                          | 31. 52. 0   | 30. 17. 25  | 28. 43. 9   | 27. 9. 12   |
| 27    |                          | 19. 24. 0   |             |             |             |
| 27    | Pollux.                  | 63. 50. 43  | 62. 20. 33  | 60. 50. 42  | 59. 21. 11  |
| 28    |                          | 51. 58. 9   | 50. 30. 25  | 49. 2. 58   | 47. 35. 50  |
| 28    | The Sun.                 | 118. 26. 54 | 116. 59. 33 | 115. 32. 31 | 114. 5. 48  |
| 29    |                          | 106. 56. 45 | 105. 31. 45 | 104. 7. 0   | 102. 42. 30 |
| 28    |                          | 95. 43. 32  | 94. 20. 21  | 92. 57. 21  | 91. 34. 31  |
| 29    |                          | 84. 42. 40  | 83. 20. 40  | 81. 58. 46  | 80. 36. 57  |
| 30    |                          | 73. 48. 56  | 72. 27. 28  | 71. 6. 2    | 69. 44. 36  |
| 31    |                          | 62. 57. 29  | 61. 35. 58  | 60. 14. 23  | 58. 52. 45  |
| S. 1  |                          | 52. 3. 25   |             |             |             |

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Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.             | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|-------|--------------------------|-------------|-------------|-------------|-------------|
|       |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | The Sun.                 | 60. 36. 39  | 59. 15. 7   | 57. 53. 38  | 56. 32. 13  |
| 2     |                          | 49. 45. 38  | 48. 24. 23  | 47. 3. 7    | 45. 41. 52  |
| 3     |                          | 38. 55. 22  |             |             |             |
| 8     | Spica $\alpha$           | 47. 13. 45  | 45. 40. 33  | 44. 7. 12   | 42. 33. 44  |
| 9     |                          | 34. 44. 37  | 33. 10. 29  | 31. 36. 17  | 30. 2. 0    |
| 10    |                          | 22. 10. 43  | 20. 36. 48  | 19. 3. 12   | 17. 30. 2   |
| 11    | Antares.                 | 55. 15. 10  | 53. 38. 38  | 52. 1. 59   | 50. 25. 13  |
| 12    |                          | 42. 20. 5   | 40. 42. 54  | 39. 5. 43   | 37. 28. 34  |
| 13    |                          | 29. 24. 59  |             |             |             |
| 13    | $\alpha$ Aquilæ.         | 79. 13. 4   | 77. 41. 6   | 76. 9. 0    | 74. 36. 51  |
| 14    |                          | 66. 55. 36  | 65. 23. 27  | 63. 51. 24  | 62. 19. 29  |
| 15    |                          | 54. 43. 37  | 53. 13. 32  | 51. 43. 59  | 50. 15. 1   |
| 16    | $\beta$ Capri-<br>corni. | 39. 55. 39  | 38. 7. 23   | 36. 18. 55  | 34. 30. 15  |
| 17    |                          | 25. 24. 17  | 23. 34. 38  | 21. 44. 52  | 19. 55. 0   |
| 18    | $\alpha$ Pegasi.         | 60. 33. 28  | 58. 51. 57  | 57. 10. 45  | 55. 29. 53  |
| 19    |                          | 47. 12. 55  | 45. 35. 29  | 43. 58. 56  | 42. 23. 21  |
| 20    |                          | 34. 44. 41  |             |             |             |
| 20    | $\alpha$ Arietis.        | 74. 50. 17  | 73. 4. 19   | 71. 18. 36  | 69. 33. 9   |
| 21    |                          | 60. 50. 45  | 59. 7. 25   | 57. 24. 32  | 55. 42. 8   |
| 22    |                          | 47. 18. 5   | 45. 39. 6   | 44. 0. 49   | 42. 23. 15  |
| 23    | Aldeba-<br>ran.          | 64. 40. 5   | 62. 58. 1   | 61. 16. 21  | 59. 35. 4   |
| 24    |                          | 51. 14. 31  | 49. 35. 36  | 47. 57. 4   | 46. 18. 55  |
| 25    |                          | 38. 13. 43  | 36. 37. 46  | 35. 2. 10   | 33. 26. 55  |
| 26    |                          | 25. 35. 34  | 24. 2. 14   | 22. 29. 12  | 20. 56. 27  |
| 27    | Pollux.                  | 57. 51. 58  | 56. 23. 4   | 54. 54. 28  | 53. 26. 10  |
| 28    |                          | 46. 9. 1    |             |             |             |
| 25    | The Sun.                 |             |             | 121. 22. 36 | 119. 54. 35 |
| 26    |                          | 112. 39. 24 | 111. 13. 19 | 109. 47. 31 | 108. 22. 0  |
| 27    |                          | 101. 18. 14 | 99. 54. 14  | 98. 30. 27  | 97. 6. 53   |
| 28    |                          | 90. 11. 52  | 88. 49. 22  | 87. 27. 0   | 86. 4. 46   |
| 29    |                          | 79. 15. 14  | 77. 53. 34  | 76. 31. 58  | 75. 10. 26  |
| 30    |                          | 68. 23. 12  | 67. 1. 48   | 65. 40. 23  | 64. 18. 57  |
| 31    |                          | 57. 31. 3   | 56. 9. 16   | 54. 47. 25  | 53. 25. 28  |



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Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  west of her.

| Days. | Stars Names.        | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|---------------------|-------------|-------------|-------------|-------------|
|       |                     | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | $\epsilon$ Arietis. | 32. 19. 4   | 33. 39. 4   | 34. 59. 34  | 36. 20. 32  |
| 2     |                     | 43. 11. 19  | 44. 34. 24  | 45. 57. 44  | 47. 21. 19  |
| 3     |                     | 54. 22. 10  |             |             |             |
| 3     | Aldebaran.          | 20. 15. 14  | 21. 43. 50  | 23. 12. 28  | 24. 41. 9   |
| 4     |                     | 32. 5. 21   | 33. 34. 23  | 35. 3. 29   | 36. 32. 40  |
| 5     |                     | 43. 59. 52  | 45. 29. 37  | 46. 59. 30  | 48. 29. 31  |
| 10    | The Sun.            |             |             |             | 39. 1. 42   |
| 11    |                     | 46. 30. 52  | 48. 1. 21   | 49. 32. 4   | 51. 3. 0    |
| 12    |                     | 58. 41. 5   | 60. 13. 23  | 61. 45. 55  | 63. 18. 41  |
| 13    |                     | 71. 6. 10   | 72. 40. 22  | 74. 14. 49  | 75. 49. 32  |
| 14    |                     | 83. 46. 55  | 85. 23. 8   | 86. 59. 37  | 88. 36. 21  |
| 15    |                     | 96. 43. 55  | 98. 22. 12  | 100. 0. 43  | 101. 39. 29 |
| 16    |                     | 109. 56. 58 | 111. 37. 12 | 113. 17. 39 | 114. 58. 19 |
| 15    | Spica $\mu$         | 39. 17. 26  | 41. 1. 53   | 42. 46. 39  | 44. 31. 44  |
| 16    |                     | 53. 21. 29  | 55. 8. 17   | 56. 55. 19  | 58. 42. 36  |
| 17    |                     | 67. 42. 21  | 69. 30. 57  | 71. 19. 43  | 73. 8. 40   |
| 18    |                     | 82. 15. 41  |             |             |             |
| 18    | Antares.            | 37. 14. 15  | 39. 0. 18   | 40. 46. 43  | 42. 33. 29  |
| 19    |                     | 51. 31. 12  | 53. 19. 17  | 55. 7. 28   | 56. 55. 43  |
| 20    |                     | 65. 57. 26  | 67. 45. 41  | 69. 33. 51  | 71. 21. 54  |
| 21    | $\rho$ Capricorni.  | 26. 2. 37   | 27. 51. 14  | 29. 39. 36  | 31. 27. 43  |
| 22    |                     | 40. 24. 13  | 42. 10. 36  | 43. 56. 39  | 45. 42. 22  |
| 23    | $\alpha$ Aquilæ     | 61. 50. 23  | 63. 20. 56  | 64. 51. 30  | 66. 22. 3   |
| 24    |                     | 73. 53. 41  | 75. 23. 34  | 76. 53. 15  | 78. 22. 44  |
| 25    |                     | 85. 46. 15  | 87. 14. 4   | 88. 41. 36  | 90. 8. 49   |
| 26    | $\alpha$ Pegasi.    | 49. 32. 38  | 50. 57. 21  | 52. 22. 12  | 53. 47. 7   |
| 27    |                     | 60. 52. 6   | 62. 17. 5   | 63. 42. 1   | 65. 6. 54   |
| 28    |                     | 72. 10. 12  | 73. 34. 37  | 74. 58. 59  | 76. 23. 15  |
| 29    | $\alpha$ Arietis.   | 39. 48. 11  | 41. 10. 55  | 42. 33. 54  | 43. 57. 9   |
| 30    |                     | 50. 56. 22  |             |             |             |
| 30    | Aldebaran.          | 16. 37. 33  | 18. 6. 15   | 19. 34. 55  | 21. 3. 34   |
| 31    |                     | 28. 26. 52  | 29. 55. 37  | 31. 24. 26  | 32. 53. 18  |
| S. 1  |                     | 40. 18. 49  |             |             |             |

Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  west of her.

| Days. | Stars Names.        | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|-------|---------------------|-------------|-------------|-------------|-------------|
|       |                     | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | $\alpha$ Arietis.   | 37. 41. 57  | 39. 3. 47   | 40. 25. 57  | 41. 48. 28  |
| 2     |                     | 48. 45. 8   | 50. 9. 9    | 51. 33. 20  | 52. 57. 40  |
| 3     | Aldebaran.          | 26. 9. 53   | 27. 38. 40  | 29. 7. 30   | 30. 36. 24  |
| 4     |                     | 38. 1. 55   | 39. 31. 15  | 41. 0. 41   | 42. 30. 14  |
| 5     |                     | 49. 59. 39  |             |             |             |
| 10    | The Sun.            | 40. 31. 6   | 42. 0. 43   | 43. 30. 33  | 45. 0. 36   |
| 11    |                     | 52. 34. 10  | 54. 5. 33   | 55. 37. 10  | 57. 9. 1    |
| 12    |                     | 64. 51. 42  | 66. 24. 57  | 67. 58. 27  | 69. 32. 11  |
| 13    |                     | 77. 24. 29  | 78. 59. 42  | 80. 35. 11  | 82. 10. 55  |
| 14    |                     | 90. 13. 21  | 91. 50. 36  | 93. 28. 7   | 95. 5. 53   |
| 15    |                     | 103. 18. 30 | 104. 57. 45 | 106. 37. 15 | 108. 16. 59 |
| 16    |                     | 116. 39. 12 | 118. 20. 17 | 120. 1. 34  |             |
| 14    | Spica $\mu$         | 32. 23. 2   | 34. 6. 6    | 35. 49. 32  | 37. 33. 18  |
| 15    |                     | 46. 17. 7   | 48. 2. 47   | 49. 48. 44  | 51. 34. 58  |
| 16    |                     | 60. 30. 8   | 62. 17. 52  | 64. 5. 49   | 65. 53. 59  |
| 17    |                     | 74. 57. 48  | 76. 47. 4   | 78. 36. 28  | 80. 26. 1   |
| 18    | Antares.            | 44. 20. 33  | 46. 7. 54   | 47. 55. 28  | 49. 43. 14  |
| 19    |                     | 58. 44. 4   | 60. 32. 26  | 62. 20. 47  | 64. 9. 7    |
| 20    |                     | 73. 9. 50   |             |             |             |
| 20    | $\beta$ Capricorni. | 18. 46. 14  | 20. 35. 36  | 22. 24. 47  | 24. 13. 48  |
| 21    |                     | 33. 15. 36  | 35. 3. 12   | 36. 50. 30  | 38. 37. 30  |
| 22    |                     | 47. 27. 44  |             |             |             |
| 22    | $\alpha$ Aquilæ.    | 55. 49. 23  | 57. 19. 23  | 58. 49. 35  | 60. 19. 55  |
| 23    |                     | 67. 52. 36  | 69. 23. 4   | 70. 53. 23  | 72. 23. 36  |
| 24    |                     | 79. 52. 0   | 81. 20. 58  | 82. 49. 39  | 84. 18. 4   |
| 25    |                     | 91. 35. 43  |             |             |             |
| 25    | $\alpha$ Pegasi.    | 43. 55. 46  | 45. 19. 35  | 46. 43. 42  | 48. 8. 4    |
| 26    |                     | 55. 12. 6   | 56. 37. 6   | 58. 2. 6    | 59. 27. 6   |
| 27    |                     | 66. 31. 44  | 67. 56. 28  | 69. 21. 7   | 70. 45. 42  |
| 28    |                     | 77. 47. 27  |             |             |             |
| 28    | $\alpha$ Arietis.   | 34. 20. 41  | 35. 41. 57  | 37. 3. 40   | 38. 25. 45  |
| 29    |                     | 45. 20. 39  | 46. 44. 21  | 48. 8. 12   | 49. 32. 13  |
| 30    | Aldebaran.          | 22. 32. 12  | 24. 0. 50   | 25. 29. 29  | 26. 58. 10  |
| 31    |                     | 34. 22. 14  | 35. 51. 14  | 37. 20. 20  | 38. 49. 32  |

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Configurations of the SATELLITES of JUPITER at  
12 o' th' Clock at Night.

|    |     |     |        |    |    |        |
|----|-----|-----|--------|----|----|--------|
| 1  |     | 2.  | .1     | ⊙  | 3. | 4.     |
| 2  |     |     | 3.     | .2 | ⊙  | 1.     |
| 3  |     | 3.  |        | .1 | ⊙  | 2.4.   |
| 4  | 1⊙  | .3  |        | 2. | ⊙  | 4.     |
| 5  | 1.0 |     | 4.     | .2 | .3 | ⊙      |
| 6  |     | 4.  |        | 1. | ⊙  | .2 .3  |
| 7  | 4.  |     |        |    | ⊙  | .1 2.  |
| 8  | 4.  |     | 2. 1.  |    | ⊙  | 3.     |
| 9  | 4.  |     |        | 3. | .2 | ⊙      |
| 10 |     | 4.  | 3.     |    | .1 | ⊙      |
| 11 | 2⊙  | 3 4 |        |    | ⊙  | 1.     |
| 12 | 1.0 |     | .2 3 4 |    | ⊙  |        |
| 13 |     |     |        | 1. | ⊙  | .2.4.3 |
| 14 |     |     |        |    | ⊙  | .1 2.  |
| 15 |     |     | 2. 1.  |    | ⊙  | 3.     |
| 16 | 3⊙  |     |        | .2 | ⊙  | .1     |
| 17 |     | 3.  |        | .1 | ⊙  | .2     |
| 18 | 2⊙  | .3  |        |    | ⊙  | 1.     |
| 19 |     |     | .2 .3  | .1 | ⊙  | 4.     |
| 20 | 1⊙  |     |        |    | ⊙  | .2 4.  |
| 21 | 4⊙  |     |        |    | ⊙  | .1 2.  |
| 22 |     | 4.  | 2. 1.  |    | ⊙  | .3     |
| 23 |     | 4.  |        | .2 | ⊙  | 3.     |
| 24 | 4.  |     | 3.     | .1 | ⊙  | .2     |
| 25 | 4.  |     | 3.     |    | ⊙  | 2. 1.  |
| 26 | 4.  |     | 2.     | .1 | ⊙  |        |
| 27 | 1⊙  | .4  |        |    | ⊙  | .3     |
| 28 | 1.0 |     | 4.     |    | ⊙  | 2.     |
| 29 |     |     | 2. 1.  |    | ⊙  | 3.     |
| 30 |     |     | .2     |    | ⊙  | 3.     |
| 31 |     |     | 2. 1.  |    | ⊙  | .3     |



# S E P T E M B E R 1774. [97]

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.     | Phases of the Moon.                               |
|--------------------|-------------------|----------------------------|---------------------------------------------------|
|                    |                   |                            | D. H. M.                                          |
|                    |                   |                            | New Moon — 5. 13. 59                              |
|                    |                   |                            | First Quarter — 12. 17. 27                        |
|                    |                   |                            | Full Moon — 19. 13. 17                            |
|                    |                   |                            | Last Quarter — 27. 7. 4                           |
| 1                  | Th.               | Giles.                     | Other Phenomena.<br>D.                            |
| 2                  | F.                | Lond. burnt, 1666, O.S.    |                                                   |
| 3                  | Sa.               |                            |                                                   |
| 4                  | Sa.               | 14th Sunday after Trinity  | 3. ☾ ☽ 14 <sup>h</sup> . 16'.                     |
| 5                  | M.                |                            | 4. ☿ Stationary.                                  |
| 6                  | Tu.               |                            | 5. ☉ eclipsed, invisible.                         |
| 7                  | W.                | Enurchus.                  | 6. ☾ ☽ 9 <sup>h</sup> . 33'.                      |
| 8                  | Th.               | Nativity of B. V. Mary.    | ☿ ☽ diff. Lat. 14'.                               |
| 9                  | F.                |                            | ☾ ☽ 16 <sup>h</sup> . 1'.                         |
| 10                 | Sa.               |                            | ☾ ☽ 23 <sup>h</sup> . 43'.                        |
| 11                 | Su.               | 15th Sunday after Trinity. | 7. ☾ ☽ 9 <sup>h</sup> . 27'.                      |
| 12                 | M.                |                            | 8. ☾ ☽ 0 <sup>h</sup> . 1'.                       |
| 13                 | Tu.               |                            | 9. ☾ ☽ 4 <sup>h</sup> . 55'.                      |
| 14                 | W.                | Holy Cross.                | 10. ☾ ☽ 16 <sup>h</sup> . 54'.                    |
| 15                 | Th.               |                            | ☾ ☽ 20 <sup>h</sup> . 46'.                        |
| 16                 | F.                |                            | 11. ☾ ☽ 1 <sup>h</sup> . 58'.                     |
| 17                 | Sa.               | Lambert.                   | 14. ☿ ☽ diff. Lat. 47'.                           |
| 18                 | Su.               | 16th Sunday after Trinity. | 15. ☾ ☽ 13 <sup>h</sup> . 30'.                    |
| 19                 | M.                |                            | ☿ ☽ diff. Lat. 28'.                               |
| 20                 | Tu.               |                            | 16. ☿ ☽ diff. Lat. 26'.                           |
| 21                 | W.                | St. Matthew.               | 18. ☾ ☽ 4 <sup>h</sup> . 58'.                     |
| 22                 | Th.               | K. Geo. III. crown'd 1761. | ☾ ☽ 14 <sup>h</sup> . 32'.                        |
| 23                 | F.                |                            | 21. ☿ ☽ diff. Lat. 57'.                           |
| 24                 | Sa.               |                            | 22. ☉ enters ☽ at 12 <sup>h</sup> . 29'.          |
| 25                 | Su.               | 17th Sunday after Trinity. | 24. ☾ ☽ 8 <sup>h</sup> . 14 <sup>h</sup> . 11'. * |
| 26                 | M.                | S. Cyprian.                | ☉ of ☽ S. of ☽'s cent.                            |
| 27                 | Tu.               |                            | ☉ 15 <sup>h</sup> . 31'. * 24' S.                 |
| 28                 | W.                | [Aug. born.                | ☾ ☽ 17 <sup>h</sup> . 4'.                         |
| 29                 | Th.               | St. Michael. Prs. Char.    | ☾ ☽ 17 <sup>h</sup> . 34'.                        |
| 30                 | F.                | S. Jerome.                 | ☾ ☽ 22 <sup>h</sup> . 50'.                        |
|                    |                   |                            | 25. ☾ ☽ diff. Lat. 32'.                           |
|                    |                   |                            | 28. ☽ ☽ diff. Lat. 4'.                            |
|                    |                   |                            | 30. ☾ ☽ 22 <sup>h</sup> . 47'.                    |

[98] SEPTEMBER 1774.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time. Sub. | Diff. |
|--------------------|-------------------|------------------|---------------------------|----------------------|----------------------|-------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.                | S.    |
| 1                  | Th.               | 5. 9. 1. 17      | 10. 42. 29, 3             | 8. 11. 47            | 0. 18, 3             | 18, 7 |
| 2                  | F.                | 5. 9. 59. 29     | 10. 46. 7, 0              | 7. 49. 51            | 0. 37, 0             | 19, 0 |
| 3                  | Sa.               | 5. 10. 57. 42    | 10. 49. 44, 5             | 7. 27. 48            | 0. 56, 0             | 19, 2 |
| 4                  | Su.               | 5. 11. 55. 58    | 10. 53. 21, 8             | 7. 5. 38             | 1. 15, 2             | 19, 5 |
| 5                  | M.                | 5. 12. 54. 15    | 10. 56. 58, 8             | 6. 43. 21            | 1. 34, 7             | 19, 8 |
| 6                  | Tu.               | 5. 13. 52. 34    | 11. 0. 35, 6              | 6. 20. 57            | 1. 54, 5             | 19, 9 |
| 7                  | W.                | 5. 14. 50. 55    | 11. 4. 12, 1              | 5. 58. 27            | 2. 14, 4             | 20, 1 |
| 8                  | Th.               | 5. 15. 49. 18    | 11. 7. 48, 5              | 5. 35. 50            | 2. 34, 5             | 20, 3 |
| 9                  | F.                | 5. 16. 47. 42    | 11. 11. 24, 8             | 5. 13. 8             | 2. 54, 8             | 20, 4 |
| 10                 | Sa.               | 5. 17. 46. 8     | 11. 15. 0, 9              | 4. 50. 21            | 3. 15, 2             | 20, 6 |
| 11                 | Su.               | 5. 18. 44. 36    | 11. 18. 36, 8             | 4. 27. 29            | 3. 35, 8             | 20, 7 |
| 12                 | M.                | 5. 19. 43. 5     | 11. 22. 12, 6             | 4. 4. 33             | 3. 56, 5             | 20, 9 |
| 13                 | Tu.               | 5. 20. 41. 35    | 11. 25. 48, 2             | 3. 41. 33            | 4. 17, 4             | 20, 9 |
| 14                 | W.                | 5. 21. 40. 7     | 11. 29. 23, 7             | 3. 18. 28            | 4. 38, 3             | 21, 0 |
| 15                 | Th.               | 5. 22. 38. 41    | 11. 32. 59, 3             | 2. 55. 20            | 4. 59, 3             | 21, 0 |
| 16                 | F.                | 5. 23. 37. 16    | 11. 36. 34, 8             | 2. 32. 8             | 5. 20, 3             | 21, 1 |
| 17                 | Sa.               | 5. 24. 35. 53    | 11. 40. 10, 3             | 2. 8. 54             | 5. 41, 4             | 21, 0 |
| 18                 | Su.               | 5. 25. 34. 32    | 11. 43. 45, 8             | 1. 45. 37            | 6. 2, 4              | 21, 1 |
| 19                 | M.                | 5. 26. 33. 12    | 11. 47. 21, 1             | 1. 22. 18            | 6. 23, 5             | 21, 0 |
| 20                 | Tu.               | 5. 27. 31. 54    | 11. 50. 56, 5             | 0. 58. 58            | 6. 44, 5             | 20, 9 |
| 21                 | W.                | 5. 28. 30. 39    | 11. 54. 32, 1             | 0. 35. 35            | 7. 5, 4              | 20, 8 |
| 22                 | Th.               | 5. 29. 29. 25    | 11. 58. 7, 8              | 0. 12. 11<br>South.  | 7. 26, 2             | 20, 7 |
| 23                 | F.                | 6. 0. 28. 14     | 12. 1. 43, 6              | 0. 11. 15            | 7. 45, 9             | 20, 6 |
| 24                 | Sa.               | 6. 1. 27. 5      | 12. 5. 19, 6              | 0. 34. 41            | 8. 7, 5              | 20, 4 |
| 25                 | Su.               | 6. 2. 25. 59     | 12. 8. 55, 7              | 0. 58. 7             | 8. 27, 9             | 20, 2 |
| 26                 | M.                | 6. 3. 24. 54     | 12. 12. 31, 9             | 1. 21. 33            | 8. 48, 1             | 20, 0 |
| 27                 | Tu.               | 6. 4. 23. 51     | 12. 16. 8, 4              | 1. 44. 59            | 9. 8, 1              | 19, 7 |
| 28                 | W.                | 6. 5. 22. 51     | 12. 19. 45, 2             | 2. 8. 24             | 9. 27, 8             | 19, 5 |
| 29                 | Th.               | 6. 6. 21. 55     | 12. 23. 22, 2             | 2. 31. 49            | 9. 47, 3             | 19, 2 |
| 30                 | F.                | 6. 7. 20. 59     | 12. 26. 59, 4             | 2. 55. 12            | 10. 6, 5             | 18, 9 |

# S E P T E M B E R 1774. [99]

| Days of the Month. | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|--------------------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|                    | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1                  | 15. 55, 0                        | 1. 4, 3                                            | 2. 25, 4                           | 0. 003551                              | 5. 13. 12                       |
| 7                  | 15. 56, 5                        | 1. 4, 1                                            | 2. 25, 8                           | 0. 002894                              | 5. 12. 53                       |
| 13                 | 15. 58, 0                        | 1. 4, 0                                            | 2. 26, 3                           | 0. 002178                              | 5. 12. 33                       |
| 19                 | 15. 59, 5                        | 1. 4, 0                                            | 2. 26, 7                           | 0. 001439                              | 5. 12. 14                       |
| 25                 | 16. 1, 2                         | 1. 4, 1                                            | 2. 27, 3                           | 0. 000706                              | 5. 11. 55                       |

## Eclipses of the SATELLITES of J U P I T E R.

| I. Satellite.<br>Immerfions. |            | II. Satellite.<br>Immerfions. |            | III. Satellite.                 |              |
|------------------------------|------------|-------------------------------|------------|---------------------------------|--------------|
| Days                         | H. M. S.   | Days                          | H. M. S.   | Days                            | H. M. S.     |
| 1                            | 19. 2. 28  | 1                             | 15* 11. 57 | 6                               | 17. 25. 28 I |
| 3                            | 13* 31. 26 | 5                             | 4. 31. 49  | 6                               | 19. 1. 27 E  |
| 5                            | 8. 0. 27   | 8                             | 17. 51. 40 | 13                              | 21. 28. 30 I |
| 7                            | 2. 29. 28  | 12                            | 7. 11. 30  | 13                              | 23. 3. 53 E  |
| 8                            | 20. 58. 33 | 15                            | 20. 31. 22 | 21                              | 1. 31. 34 I  |
| 10                           | 15* 27. 34 | 19                            | 9* 51. 19  | 21                              | 3. 6. 23 E   |
| 12                           | 9* 56. 38  | 22                            | 23. 11. 20 | 28                              | 5. 34. 39 I  |
| 14                           | 4. 25. 38  | 26                            | 12* 31. 18 | 28                              | 7. 8. 51 E   |
| 15                           | 22. 54. 45 | 30                            | 1. 51. 15  | IV. Satellite.<br>Conjunctions. |              |
| 17                           | 17. 23. 47 |                               |            |                                 |              |
| 19                           | 11* 52. 51 |                               |            |                                 |              |
| 21                           | 6. 21. 55  |                               |            |                                 |              |
| 23                           | 0. 50. 57  |                               |            | 6                               | 15* 7 Sup.   |
| 24                           | 19. 19. 59 |                               |            | 15                              | 0. 17 Inf.   |
| 26                           | 13* 49. 4  |                               |            | 23                              | 9* 27 Sup.   |
| 28                           | 8* 18. 7   |                               |            |                                 |              |
| 30                           | 2. 47. 8   |                               |            |                                 |              |



100] SEPTEMBER 1774.

| Date | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric Lati-<br>tude. | Declina-<br>tion. | Passage<br>over<br>Merid |
|------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|--------------------------|
|      | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                    |

MERCURY. Gr. El. 4<sup>l</sup>. sup.  $\delta$  30<sup>d</sup>. 1 $\frac{1}{2}$ <sup>h</sup>.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 1. 1. 17  | 1. 46 S | 4. 21. 36 | 0. 40 S | 13. 41 N | 22. 53 |
| 7  | 2. 7. 47  | 2. 38 N | 4. 27. 22 | 0. 48 N | 13. 9    | 22. 56 |
| 13 | 3. 15. 16 | 6. 2    | 5. 6. 34  | 1. 37   | 10. 36   | 23. 13 |
| 19 | 4. 19. 9  | 6. 59   | 5. 17. 22 | 1. 50   | 6. 42    | 23. 32 |
| 25 | 5. 17. 27 | 5. 58   | 5. 28. 23 | 1. 38   | 2. 8     | 23. 50 |

V E N U S.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 2. 21. 17 | 0. 24 N | 4. 7. 49  | 0. 13 N | 18. 32 N | 22. 0  |
| 7  | 3. 0. 58  | 0. 58   | 4. 15. 4  | 0. 30   | 16. 49   | 22. 8  |
| 13 | 3. 10. 41 | 1. 30   | 4. 22. 20 | 0. 45   | 14. 48   | 22. 16 |
| 19 | 3. 20. 25 | 1. 59   | 4. 29. 39 | 0. 59   | 12. 33   | 22. 23 |
| 25 | 4. 0. 10  | 2. 25   | 5. 7. 0   | 1. 10   | 10. 3    | 22. 29 |

M A R S.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 2. 14. 24 | 0. 49 N | 3. 15. 56 | 0. 39 N | 23. 10 N | 20. 26 |
| 7  | 2. 17. 27 | 0. 54   | 3. 19. 41 | 0. 44   | 22. 45   | 20. 21 |
| 13 | 2. 20. 28 | 0. 59   | 3. 23. 23 | 0. 50   | 22. 16   | 20. 15 |
| 19 | 2. 23. 27 | 1. 4    | 3. 27. 1  | 0. 55   | 21. 41   | 20. 9  |
| 25 | 2. 26. 24 | 1. 9    | 4. 0. 36  | 1. 1    | 21. 2    | 20. 2  |

J U P I T E R.

|    |          |         |           |         |          |        |
|----|----------|---------|-----------|---------|----------|--------|
| 1  | 1. 5. 20 | 1. 11 S | 1. 16. 6  | 1. 18 S | 15. 26 N | 16. 11 |
| 7  | 1. 5. 52 | 1. 10   | 1. 16. 5  | 1. 19   | 15. 24   | 15. 49 |
| 13 | 1. 6. 25 | 1. 10   | 1. 15. 59 | 1. 20   | 15. 22   | 15. 27 |
| 19 | 1. 6. 58 | 1. 9    | 1. 15. 45 | 1. 21   | 15. 17   | 15. 5  |
| 25 | 1. 7. 31 | 1. 9    | 1. 15. 24 | 1. 22   | 15. 10   | 14. 42 |

S A T U R N.  $\delta$  21<sup>d</sup>. 20 $\frac{1}{2}$ <sup>h</sup>.

|    |           |         |           |        |         |        |
|----|-----------|---------|-----------|--------|---------|--------|
| 1  | 5. 28. 39 | 2. 18 N | 5. 26. 48 | 2. 6 N | 3. 12 N | 1. 9   |
| 7  | 5. 28. 52 | 2. 19   | 5. 27. 32 | 2. 6   | 2. 54   | 0. 50  |
| 13 | 5. 29. 4  | 2. 19   | 5. 28. 16 | 2. 6   | 2. 37   | 0. 31  |
| 19 | 5. 29. 16 | 2. 19   | 5. 29. 0  | 2. 6   | 2. 20   | 0. 11  |
| 25 | 5. 29. 28 | 2. 19   | 5. 29. 45 | 2. 6   | 2. 2    | 23. 50 |

# S E P T E M B E R 1774. [101]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midnight. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|------------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D. M. S.                     |
| 1                  | Th.               | 3. 17. 5. 44              | 3. 23. 4. 23                  | 4. 22. 58 S              | 4. 3. 5 S                    |
| 2                  | F.                | 3. 29. 4. 51              | 4. 5. 7. 31                   | 3. 40. 28                | 3. 15. 15                    |
| 3                  | St.               | 4. 11. 12. 41             | 4. 17. 20. 41                 | 2. 47. 40                | 2. 17. 56                    |
| 4                  | Sa.               | 4. 23. 31. 47             | 4. 29. 46. 41                 | 1. 46. 22                | 1. 13. 8                     |
| 5                  | M.                | 5. 6. 3. 47               | 5. 12. 25. 40                 | 0. 38. 45 S              | 0. 3. 36 S                   |
| 6                  | Tu.               | 5. 18. 49. 53             | 5. 25. 18. 26                 | 0. 31. 54 N              | 1. 7. 23 N                   |
| 7                  | W.                | 6. 1. 50. 28              | 6. 8. 26. 8                   | 1. 42. 16                | 2. 16. 7                     |
| 8                  | Th.               | 6. 15. 5. 14              | 6. 21. 47. 48                 | 2. 48. 25                | 3. 18. 40                    |
| 9                  | F.                | 6. 28. 33. 30             | 7. 5. 22. 28                  | 3. 46. 22                | 4. 11. 6                     |
| 10                 | Sa.               | 7. 12. 14. 21             | 7. 19. 9. 44                  | 4. 32. 25                | 4. 49. 56                    |
| 11                 | Sa.               | 7. 26. 6. 21              | 8. 3. 6. 7                    | 5. 3. 16                 | 5. 12. 14                    |
| 12                 | M.                | 8. 10. 8. 0               | 8. 17. 11. 55                 | 5. 16. 38                | 5. 16. 9                     |
| 13                 | Tu.               | 8. 24. 17. 30             | 9. 1. 24. 31                  | 5. 10. 55                | 5. 0. 55                     |
| 14                 | W.                | 9. 8. 32. 41              | 9. 15. 41. 39                 | 4. 46. 14                | 4. 27. 8                     |
| 15                 | Th.               | 9. 22. 50. 57             | 10. 0. 0. 24                  | 4. 3. 46                 | 3. 36. 39                    |
| 16                 | F.                | 10. 7. 9. 22              | 10. 14. 17. 35                | 3. 6. 10                 | 2. 32. 49                    |
| 17                 | Sa.               | 10. 21. 24. 22            | 10. 28. 29. 22                | 1. 57. 15                | 1. 19. 57                    |
| 18                 | Sa.               | 11. 5. 32. 3              | 11. 12. 32. 0                 | 0. 41. 43 N              | 0. 3. 5 N                    |
| 19                 | M.                | 11. 19. 28. 40            | 11. 26. 21. 44                | 0. 35. 16 S              | 1. 12. 46 S                  |
| 20                 | Tu.               | 0. 3. 10. 47              | 0. 9. 55. 32                  | 1. 48. 50                | 2. 22. 58                    |
| 21                 | W.                | 0. 16. 35. 40             | 0. 23. 11. 14                 | 2. 54. 45                | 3. 23. 47                    |
| 22                 | Th.               | 0. 29. 41. 59             | 1. 6. 8. 6                    | 3. 49. 47                | 4. 12. 33                    |
| 23                 | F.                | 1. 12. 29. 33             | 1. 18. 46. 31                 | 4. 31. 52                | 4. 47. 41                    |
| 24                 | Sa.               | 1. 24. 59. 25             | 2. 1. 8. 24                   | 4. 59. 53                | 5. 8. 31                     |
| 25                 | Sa.               | 2. 7. 13. 55              | 2. 13. 16. 33                 | 5. 13. 32                | 5. 15. 2                     |
| 26                 | M.                | 2. 19. 16. 40             | 2. 25. 14. 50                 | 5. 13. 5                 | 5. 7. 45                     |
| 27                 | Tu.               | 3. 1. 11. 34              | 3. 7. 7. 28                   | 4. 59. 8                 | 4. 47. 20                    |
| 28                 | W.                | 3. 13. 3. 22              | 3. 18. 59. 37                 | 4. 32. 29                | 4. 14. 39                    |
| 29                 | Th.               | 3. 24. 56. 55             | 4. 0. 55. 47                  | 3. 54. 4                 | 3. 30. 50                    |
| 30                 | F.                | 4. 6. 56. 53              | 4. 13. 0. 43                  | 3. 5. 9                  | 2. 37. 14                    |

[102] S E P T E M B E R 1774.

| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Asc. at Midn. | D's Declination at Noon. | D's Declination at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|-------------------------|--------------------------|--------------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                   | D. M.                    | D. M.                    |
| 1                  | Th.               | 27       | 21. 11                  | 107. 57                   | 114. 11                 | 18. 1 N                  | 17. 30 N                 |
| 2                  | F.                | 28       | 21. 58                  | 120. 26                   | 126. 40                 | 16. 46                   | 15. 52                   |
| 3                  | Sa.               | 29       | 22. 45                  | 132. 53                   | 139. 5                  | 14. 45                   | 13. 28                   |
| 4                  | Sa.               | 30       | 23. 32                  | 145. 16                   | 151. 26                 | 12. 1                    | 10. 25                   |
| 5                  | M.                | 1        | ♂                       | 157. 36                   | 163. 45                 | 8. 42                    | 6. 51                    |
| 6                  | Tu.               | 2        | 0. 20                   | 169. 55                   | 176. 7                  | 4. 55                    | 2. 54 N                  |
| 7                  | W.                | 3        | 1. 8                    | 182. 22                   | 188. 39                 | 0. 50 N                  | 1. 16 S                  |
| 8                  | Th.               | 4        | 1. 56                   | 194. 59                   | 201. 23                 | 3. 22 S                  | 5. 26                    |
| 9                  | F.                | 5        | 2. 46                   | 207. 53                   | 214. 29                 | 7. 27                    | 9. 23                    |
| 10                 | Sa.               | 6        | 3. 38                   | 221. 12                   | 228. 3                  | 11. 12                   | 12. 53                   |
| 11                 | Sa.               | 7        | 4. 32                   | 235. 0                    | 242. 6                  | 14. 23                   | 15. 42                   |
| 12                 | M.                | 8        | 5. 28                   | 249. 18                   | 256. 37                 | 16. 46                   | 17. 36                   |
| 13                 | Tu.               | 9        | 6. 25                   | 264. 1                    | 271. 29                 | 18. 10                   | 18. 27                   |
| 14                 | W.                | 10       | 7. 25                   | 278. 59                   | 286. 29                 | 18. 26                   | 18. 7                    |
| 15                 | Th.               | 11       | 8. 22                   | 293. 58                   | 301. 24                 | 17. 31                   | 16. 39                   |
| 16                 | F.                | 12       | 9. 18                   | 308. 45                   | 316. 0                  | 15. 30                   | 14. 7                    |
| 17                 | Sa.               | 13       | 10. 14                  | 323. 9                    | 330. 11                 | 12. 32                   | 10. 46                   |
| 18                 | Sa.               | 14       | 11. 8                   | 337. 5                    | 343. 53                 | 8. 51                    | 6. 49                    |
| 19                 | M.                | 15       | 12. 0                   | 350. 34                   | 357. 9                  | 4. 43                    | 2. 34 S                  |
| 20                 | Tu.               | 16       | 12. 50                  | 3. 38                     | 10. 3                   | 0. 25 S                  | 1. 45 N                  |
| 21                 | W.                | 17       | 13. 39                  | 16. 25                    | 22. 43                  | 3. 50 N                  | 5. 52                    |
| 22                 | Th.               | 18       | 14. 26                  | 28. 58                    | 35. 13                  | 7. 47                    | 9. 36                    |
| 23                 | F.                | 19       | 15. 14                  | 41. 27                    | 47. 40                  | 11. 17                   | 12. 49                   |
| 24                 | Sa.               | 20       | 16. 1                   | 53. 53                    | 60. 6                   | 14. 11                   | 15. 23                   |
| 25                 | Sa.               | 21       | 16. 49                  | 66. 19                    | 72. 33                  | 16. 23                   | 17. 13                   |
| 26                 | M.                | 22       | 17. 37                  | 78. 47                    | 85. 1                   | 17. 50                   | 18. 16                   |
| 27                 | Tu.               | 23       | 18. 24                  | 91. 15                    | 97. 29                  | 18. 29                   | 18. 30                   |
| 28                 | W.                | 24       | 19. 12                  | 103. 43                   | 109. 57                 | 18. 18                   | 17. 55                   |
| 29                 | Th.               | 25       | 19. 59                  | 116. 9                    | 122. 22                 | 17. 20                   | 16. 32                   |
| 30                 | F.                | 26       | 20. 46                  | 128. 32                   | 134. 43                 | 15. 34                   | 14. 25                   |



# S E P T E M B E R 1774. [103]

| Days of the Month. | Days of the Week. | Semidr. D at Noon. | Semidr. D at Mid-night. | Hor. Par. D at Noon. | Hor. Par. D at Midnight. | Proport. Lo-ear. at Noon. | Proport. Lo-ear. at Midn. |
|--------------------|-------------------|--------------------|-------------------------|----------------------|--------------------------|---------------------------|---------------------------|
|                    |                   | M. S.              | M. S.                   | M. S.                | M. S.                    |                           |                           |
| 1                  | Th.               | 14. 50             | 14. 52                  | 54. 26               | 54. 34                   | 5194                      | 5183                      |
| 2                  | F.                | 14. 54             | 14. 57                  | 54. 42               | 54. 53                   | 5173                      | 5158                      |
| 3                  | Sa.               | 15. 0              | 15. 4                   | 55. 4                | 55. 18                   | 5144                      | 5125                      |
| 4                  | Su.               | 15. 8              | 15. 12                  | 55. 32               | 55. 47                   | 5107                      | 5087                      |
| 5                  | M.                | 15. 16             | 15. 21                  | 56. 3                | 56. 18                   | 5067                      | 5048                      |
| 6                  | Tu.               | 15. 25             | 15. 29                  | 56. 35               | 56. 50                   | 5026                      | 5006                      |
| 7                  | W.                | 15. 34             | 15. 38                  | 57. 6                | 57. 21                   | 4986                      | 4967                      |
| 8                  | Th.               | 15. 42             | 15. 46                  | 57. 37               | 57. 50                   | 4947                      | 4931                      |
| 9                  | F.                | 15. 49             | 15. 53                  | 58. 4                | 58. 17                   | 4913                      | 4897                      |
| 10                 | Sa.               | 15. 56             | 15. 59                  | 58. 30               | 58. 40                   | 4881                      | 4869                      |
| 11                 | Su.               | 16. 2              | 16. 5                   | 58. 51               | 59. 1                    | 4855                      | 4843                      |
| 12                 | M.                | 16. 7              | 16. 10                  | 59. 10               | 59. 18                   | 4832                      | 4822                      |
| 13                 | Tu.               | 16. 11             | 16. 13                  | 59. 25               | 59. 31                   | 4813                      | 4806                      |
| 14                 | W.                | 16. 14             | 16. 15                  | 59. 36               | 59. 39                   | 4800                      | 4797                      |
| 15                 | Th.               | 16. 16             | 16. 16                  | 59. 41               | 59. 41                   | 4794                      | 4794                      |
| 16                 | F.                | 16. 15             | 16. 14                  | 59. 39               | 59. 35                   | 4797                      | 4801                      |
| 17                 | Sa.               | 16. 13             | 16. 10                  | 59. 29               | 59. 21                   | 4809                      | 4819                      |
| 18                 | Su.               | 16. 7              | 16. 4                   | 59. 9                | 58. 56                   | 4833                      | 4849                      |
| 19                 | M.                | 15. 59             | 15. 55                  | 58. 40               | 58. 24                   | 4869                      | 4889                      |
| 20                 | Tu.               | 15. 50             | 15. 44                  | 58. 5                | 57. 46                   | 4912                      | 4936                      |
| 21                 | W.                | 15. 38             | 15. 33                  | 57. 25               | 57. 4                    | 4962                      | 4989                      |
| 22                 | Th.               | 15. 27             | 15. 22                  | 56. 43               | 56. 22                   | 5015                      | 5042                      |
| 23                 | F.                | 15. 16             | 15. 11                  | 56. 2                | 55. 43                   | 5068                      | 5093                      |
| 24                 | Sa.               | 15. 6              | 15. 2                   | 55. 26               | 55. 10                   | 5115                      | 5136                      |
| 25                 | Su.               | 14. 58             | 14. 55                  | 54. 57               | 54. 46                   | 5153                      | 5167                      |
| 26                 | M.                | 14. 53             | 14. 51                  | 54. 37               | 54. 30                   | 5179                      | 5189                      |
| 27                 | Tu.               | 14. 50             | 14. 50                  | 54. 26               | 54. 25                   | 5194                      | 5195                      |
| 28                 | W.                | 14. 50             | 14. 51                  | 54. 26               | 54. 30                   | 5194                      | 5189                      |
| 29                 | Th.               | 14. 53             | 14. 55                  | 54. 36               | 54. 45                   | 5181                      | 5169                      |
| 30                 | F.                | 14. 58             | 15. 1                   | 54. 56               | 55. 8                    | 5154                      | 5138                      |

[104] SEPTEMBER 1774.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.             | Noon.      | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|--------------------------|------------|-------------|-------------|-------------|
|       |                          | D. M. S.   | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | The Sun.                 | 52. 3. 25  | 50. 41. 18  | 49. 19. 3   | 47. 56. 41  |
| 2     |                          | 41. 2. 47  | 39. 39. 33  |             |             |
| 7     | Antares.                 | 65. 1. 13  | 63. 24. 5   | 61. 46. 49  | 60. 9. 24   |
| 8     |                          | 52. 0. 29  | 50. 22. 24  | 48. 44. 13  | 47. 6. 1    |
| 9     |                          | 38. 55. 19 | 37. 17. 15  | 35. 39. 25  | 34. 1. 49   |
| 10    |                          | 25. 59. 15 |             |             |             |
| 10    | $\alpha$ Aquilæ.         | 75. 53. 31 | 74. 21. 9   | 72. 48. 50  | 71. 16. 34  |
| 11    |                          | 63. 37. 7  | 62. 5. 50   | 60. 34. 51  | 59. 4. 13   |
| 12    |                          | 51. 37. 36 | 50. 10. 3   | 48. 43. 15  | 47. 17. 16  |
| 13    | $\beta$ Capri-<br>corni. | 36. 28. 39 | 34. 42. 29  | 32. 56. 14  | 31. 9. 53   |
| 14    |                          | 22. 17. 0  | 20. 30. 14  | 18. 43. 26  | 16. 56. 36  |
| 15    | $\alpha$ Pegasi.         | 58. 3. 50  | 56. 25. 47  | 54. 48. 5   | 53. 10. 48  |
| 16    |                          | 45. 12. 25 | 43. 38. 51  | 42. 6. 10   | 40. 34. 26  |
| 17    | $\alpha$ Arietis.        | 73. 1. 45  | 71. 18. 31  | 69. 35. 27  | 67. 52. 34  |
| 18    |                          | 59. 21. 45 | 57. 40. 26  | 55. 59. 26  | 54. 18. 49  |
| 19    |                          | 46. 2. 19  | 44. 24. 31  | 42. 47. 21  | 41. 10. 52  |
| 20    |                          | 33. 20. 44 |             |             |             |
| 20    | Aldeba-<br>ran.          | 63. 24. 51 | 61. 42. 55  | 60. 1. 17   | 58. 19. 58  |
| 21    |                          | 49. 57. 59 | 48. 18. 30  | 46. 39. 21  | 45. 0. 30   |
| 22    |                          | 36. 51. 8  | 35. 14. 12  | 33. 37. 35  | 32. 1. 17   |
| 23    |                          | 24. 4. 30  | 22. 30. 3   | 20. 55. 54  | 19. 22. 3   |
| 24    | Pollux.                  | 56. 14. 20 | 54. 44. 29  | 53. 14. 58  | 51. 45. 48  |
| 25    |                          | 44. 25. 6  | 42. 57. 59  | 41. 31. 12  | 40. 4. 49   |
| 26    |                          | 32. 59. 20 |             |             |             |
| 26    | Regulus.                 | 67. 33. 38 | 66. 4. 21   | 64. 35. 10  | 63. 6. 6    |
| 27    |                          | 55. 41. 58 | 54. 13. 19  | 52. 44. 41  | 51. 16. 4   |
| 25    | The Sun.                 | 115. 5. 21 | 113. 42. 12 | 112. 19. 13 | 110. 56. 24 |
| 26    |                          | 104. 4. 39 | 102. 42. 42 | 101. 20. 51 | 99. 59. 6   |
| 27    |                          | 93. 11. 33 | 91. 50. 14  | 90. 28. 55  | 89. 7. 38   |
| 28    |                          | 82. 20. 58 | 80. 59. 33  | 79. 38. 5   | 78. 16. 33  |
| 29    |                          | 71. 27. 40 | 70. 5. 35   | 68. 43. 22  | 67. 21. 1   |
| 30    |                          | 60. 26. 58 | 59. 3. 37   | 57. 40. 4   | 56. 16. 19  |
| O.1   |                          | 49. 14. 16 |             |             |             |

# S E P T E M B E R 1774. [105]

Distances of P's Center from ☉, and from Stars east of her.

| Days. | Stars Names.       | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|-------|--------------------|-------------|-------------|-------------|-------------|
|       |                    | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | The Sun.           | 46. 34. 10  | 45. 11. 32  | 43. 48. 47  | 42. 25. 52  |
| 7     | Antares.           | 58. 31. 50  | 56. 54. 9   | 55. 16. 22  | 53. 30. 28  |
| 8     |                    | 45. 27. 48  | 43. 49. 36  | 42. 11. 28  | 40. 33. 22  |
| 9     |                    | 32. 24. 26  | 30. 47. 26  | 29. 10. 52  | 27. 34. 47  |
| 10    | α Aquilæ.          | 69. 44. 21  | 68. 12. 15  | 66. 40. 20  | 65. 8. 37   |
| 11    |                    | 57. 33. 58  | 56. 4. 4    | 54. 34. 40  | 53. 5. 51   |
| 12    |                    | 45. 52. 9   |             |             |             |
| 12    | β Capri-<br>corni. | 43. 52. 19  | 41. 45. 33  | 40. 0. 41   | 38. 14. 43  |
| 13    |                    | 29. 23. 28  | 27. 36. 57  | 25. 50. 22  | 24. 3. 43   |
| 14    |                    | 15. 9. 44   |             |             |             |
| 14    | α Pegasi.          | 64. 38. 35  | 62. 59. 37  | 61. 20. 48  | 59. 42. 11  |
| 15    |                    | 51. 33. 59  | 49. 57. 39  | 48. 21. 53  | 46. 46. 47  |
| 16    |                    | 39. 3. 43   |             |             |             |
| 16    | α Arietis.         | 79. 56. 7   | 78. 12. 21  | 76. 28. 41  | 74. 45. 9   |
| 17    |                    | 66. 9. 55   | 64. 27. 29  | 62. 45. 17  | 61. 3. 22   |
| 18    |                    | 52. 38. 37  | 50. 58. 49  | 49. 19. 28  | 47. 40. 37  |
| 19    |                    | 39. 35. 8   | 38. 0. 10   | 36. 26. 3   | 34. 52. 53  |
| 20    | Aldeba-<br>ran.    | 56. 38. 57  | 54. 58. 15  | 53. 17. 51  | 51. 37. 46  |
| 21    |                    | 43. 21. 58  | 41. 43. 47  | 40. 5. 55   | 38. 28. 22  |
| 22    |                    | 30. 25. 18  | 28. 49. 38  | 27. 14. 17  | 25. 39. 14  |
| 23    |                    | 17. 48. 29  |             |             |             |
| 23    | Pollux.            | 62. 17. 3   | 60. 45. 53  | 59. 15. 2   | 57. 44. 31  |
| 24    |                    | 50. 16. 58  | 48. 48. 29  | 47. 20. 20  | 45. 52. 33  |
| 25    |                    | 38. 38. 50  | 37. 13. 17  | 35. 48. 10  | 34. 23. 31  |
| 26    | Regulus.           | 61. 37. 8   | 60. 8. 15   | 58. 39. 26  | 57. 10. 40  |
| 27    |                    | 49. 47. 28  |             |             |             |
| 24    | The Sun.           | 120. 39. 54 | 119. 15. 58 | 117. 52. 14 | 116. 28. 42 |
| 25    |                    | 109. 33. 45 | 108. 11. 16 | 106. 48. 56 | 105. 26. 43 |
| 26    |                    | 98. 37. 26  | 97. 15. 52  | 95. 54. 22  | 94. 32. 56  |
| 27    |                    | 87. 46. 21  | 86. 25. 2   | 85. 3. 43   | 83. 42. 21  |
| 28    |                    | 76. 54. 58  | 75. 33. 17  | 74. 11. 31  | 72. 49. 38  |
| 29    |                    | 65. 58. 32  | 64. 35. 54  | 63. 13. 6   | 61. 50. 7   |
| 30    |                    | 54. 52. 22  | 53. 28. 12  | 52. 3. 47   | 50. 39. 9   |



[106] S E P T E M B E R 1774.

Distances of J's Center from ☉, and from Stars west of her.

| Days. | Stars Names.  | Noon.       | 3 Hours.    | 6 Hours.   | 9 Hours.    |
|-------|---------------|-------------|-------------|------------|-------------|
|       |               | D. M. S.    | D. M. S.    | D. M. S.   | D. M. S.    |
| 1     | Aldebaran.    | 40. 18. 51  | 41. 48. 12  | 43. 17. 41 | 44. 47. 17  |
| 2     |               | 52. 17. 22  | 53. 47. 51  | 55. 18. 37 | 56. 49. 19  |
| 3     |               | 64. 25. 58  | 65. 57. 52  | 67. 29. 58 | 69. 2. 17   |
| 4     |               | 76. 47. 0   |             |            |             |
| 9     | The Sun.      | 41. 54. 7   | 43. 28. 40  | 45. 3. 35  | 46. 38. 35  |
| 10    |               | 54. 35. 55  | 56. 11. 51  | 57. 47. 55 | 59. 24. 9   |
| 11    |               | 67. 27. 21  | 69. 4. 25   | 70. 41. 36 | 72. 18. 56  |
| 12    |               | 80. 27. 23  | 82. 5. 27   | 83. 43. 38 | 85. 21. 56  |
| 13    |               | 93. 35. 2   | 95. 13. 58  | 96. 52. 59 | 98. 32. 6   |
| 14    |               | 106. 48. 58 | 108. 28. 34 | 110. 8. 15 | 111. 47. 58 |
| 15    |               | 120. 7. 15  |             |            |             |
| 13    | Spica ♀       | 63. 56. 14  | 65. 41. 55  | 67. 27. 41 | 69. 13. 34  |
| 14    |               | 78. 4. 30   |             |            |             |
| 14    | Antares.      | 33. 13. 27  | 34. 55. 22  | 36. 37. 42 | 38. 20. 27  |
| 15    |               | 46. 58. 59  | 48. 43. 26  | 50. 28. 3  | 52. 12. 49  |
| 16    |               | 60. 58. 12  | 62. 43. 29  | 64. 28. 48 | 66. 14. 9   |
| 17    | β Capricorni. | 20. 38. 21  | 22. 24. 59  | 24. 11. 33 | 25. 58. 1   |
| 18    |               | 34. 48. 26  | 36. 34. 5   | 38. 19. 34 | 40. 4. 52   |
| 19    |               | 48. 48. 14  |             |            |             |
| 19    | α Aquilæ.     | 56. 58. 5   | 58. 27. 34  | 59. 57. 20 | 61. 27. 20  |
| 20    |               | 68. 59. 16  | 70. 29. 45  | 72. 0. 14  | 73. 30. 39  |
| 21    |               | 81. 0. 47   |             |            |             |
| 21    | Fomalhaut.    | 48. 11. 29  | 49. 37. 42  | 51. 4. 12  | 52. 30. 55  |
| 22    |               | 59. 46. 44  | 61. 14. 5   | 62. 41. 27 | 64. 8. 48   |
| 23    |               | 71. 24. 15  | 72. 50. 59  | 74. 17. 35 | 75. 44. 2   |
| 24    | α Pegasi.     | 68. 4. 2    | 69. 29. 52  | 70. 55. 35 | 72. 21. 12  |
| 25    |               | 79. 27. 28  | 80. 52. 22  | 82. 17. 9  | 83. 41. 49  |
| 26    | γ Arietis.    | 47. 5. 58   | 48. 30. 22  | 49. 54. 52 | 51. 19. 29  |
| 27    |               | 58. 23. 52  | 59. 48. 59  | 61. 14. 10 | 62. 39. 25  |
| 28    | Aldebaran.    | 35. 16. 50  | 37. 45. 39  | 39. 14. 32 | 40. 43. 28  |
| 29    |               | 48. 9. 27   | 49. 38. 58  | 51. 8. 37  | 52. 38. 24  |
| 30    |               | 60. 9. 43   | 61. 40. 31  | 63. 11. 31 | 64. 42. 44  |
| O.1   |               | 72. 22. 14  |             |            |             |

# S E P T E M B E R 1774. [107]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

| Dys. | Stars<br>Names.          | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|------|--------------------------|-------------|-------------|-------------|-------------|
|      |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1    | Aldeba-<br>ran.          | 46. 17. 1   | 47. 46. 53  | 49. 16. 54  | 50. 47. 3   |
| 2    |                          | 58. 20. 18  | 59. 51. 27  | 61. 22. 46  | 62. 54. 16  |
| 3    |                          | 70. 34. 48  | 72. 7. 32   | 73. 40. 28  | 75. 13. 37  |
| 8    | The Sun.                 |             |             | 38. 45. 21  | 40. 19. 38  |
| 9    |                          | 48. 13. 45  | 49. 49. 3   | 51. 24. 31  | 53. 0. 8    |
| 10   |                          | 61. 0. 31   | 62. 37. 1   | 64. 13. 39  | 65. 50. 26  |
| 11   |                          | 73. 56. 23  | 75. 33. 57  | 77. 11. 38  | 78. 49. 27  |
| 12   |                          | 87. 0. 21   | 88. 38. 52  | 90. 17. 29  | 91. 56. 13  |
| 13   |                          | 100. 11. 18 | 101. 50. 36 | 103. 29. 59 | 105. 9. 26  |
| 14   |                          | 113. 27. 45 | 115. 7. 35  | 116. 47. 27 | 118. 27. 20 |
| 12   | Spica $\mu$              | 56. 54. 40  | 58. 39. 57  | 60. 25. 15  | 62. 10. 41  |
| 13   |                          | 70. 59. 34  | 72. 45. 40  | 74. 31. 51  | 76. 18. 8   |
| 14   | Antares.                 | 40. 3. 34   | 41. 47. 1   | 43. 30. 43  | 45. 14. 44  |
| 15   |                          | 53. 57. 44  | 55. 42. 44  | 57. 27. 48  | 59. 12. 57  |
| 16   |                          | 67. 59. 39  |             |             |             |
| 16   | $\beta$ Capri-<br>corni. | 13. 31. 10  | 15. 18. 7   | 17. 4. 54   | 18. 51. 39  |
| 17   |                          | 27. 44. 22  | 29. 30. 36  | 31. 16. 41  | 33. 2. 38   |
| 18   |                          | 41. 49. 58  | 43. 34. 52  | 45. 19. 33  | 47. 4. 0    |
| 19   | $\alpha$ Aquilæ.         | 62. 57. 32  | 64. 27. 53  | 65. 58. 16  | 67. 28. 44  |
| 20   |                          | 75. 0. 57   | 76. 31. 9   | 78. 1. 12   | 79. 31. 6   |
| 21   | Fomal-<br>haut.          | 53. 57. 49  | 55. 24. 53  | 56. 52. 5   | 58. 19. 23  |
| 22   |                          | 65. 36. 5   | 67. 3. 17   | 68. 30. 23  | 69. 57. 22  |
| 23   |                          | 77. 10. 17  |             |             |             |
| 23   | $\alpha$ Pegasi.         | 62. 19. 45  | 63. 45. 50  | 65. 12. 5   | 66. 38. 6   |
| 24   |                          | 73. 46. 42  | 75. 12. 4   | 76. 37. 19  | 78. 2. 27   |
| 25   |                          | 85. 6. 22   |             |             |             |
| 25   | $\alpha$ Arietis.        | 41. 29. 4   | 42. 53. 37  | 44. 17. 35  | 45. 41. 42  |
| 26   |                          | 52. 44. 12  | 54. 9. 0    | 55. 33. 53  | 56. 58. 50  |
| 27   |                          | 64. 4. 44   |             |             |             |
| 27   | Aldeba-<br>ran.          | 30. 21. 4   | 31. 50. 33  | 33. 19. 18  | 34. 48. 3   |
| 28   |                          | 42. 12. 28  | 43. 41. 34  | 45. 10. 45  | 46. 40. 3   |
| 29   |                          | 54. 8. 19   | 55. 38. 24  | 57. 8. 40   | 58. 39. 6   |
| 30   |                          | 66. 14. 10  | 67. 45. 49  | 69. 17. 43  | 70. 49. 51  |

[108] SEPTEMBER 1774.

Configurations of the SATELLITES of JUPITER at  
4 o' th' Clock in the Morning.

|    |      |      |      |   |      |          |
|----|------|------|------|---|------|----------|
| 1  |      |      | 1    | ⊙ | 2    | 4        |
| 2  | 2●   | 3    |      | ⊙ | 1    | 4        |
| 3  |      | 3    | 1    | ⊙ |      | 4        |
| 4  | 1●   |      |      | ⊙ | 2, 3 | 4        |
| 5  |      |      |      | ⊙ | 1    | 2, 3, 4  |
| 6  |      | 2, 1 |      | ⊙ |      | 3, 4     |
| 7  |      | 2    |      | ⊙ | 3, 4 | 1        |
| 8  |      | 3    | 1    | ⊙ | 2    |          |
| 9  |      | 3, 4 |      | ⊙ | 2, 1 |          |
| 10 | 4    | 3    | 1    | ⊙ |      |          |
| 11 | 1    |      |      | ⊙ |      | 3, 2, 1● |
| 12 | 4    |      |      | ⊙ | 2    | 1, 3     |
| 13 | 4    |      | 2, 1 | ⊙ |      | 3        |
| 14 | 4    | 2    |      | ⊙ | 1    | 3        |
| 15 |      | 4    |      | ⊙ | 2    |          |
| 16 |      | 3    |      | ⊙ | 1, 2 |          |
| 17 |      | 3    | 2    | 1 | ⊙    | 4        |
| 18 | 3, 0 |      | 2    | ⊙ | 1    | 4        |
| 19 | 1, 0 |      |      | ⊙ | 2    | 3        |
| 20 |      |      | 1, 2 | ⊙ |      | 3        |
| 21 |      | 2    |      | ⊙ | 1    | 3        |
| 22 |      | 1, 3 |      | ⊙ | 2    | 4        |
| 23 |      | 3    |      | ⊙ | 2    | 1        |
| 24 |      | 3    | 2    | 1 | ⊙    | 4        |
| 25 |      | 4    | 2, 3 | ⊙ | 1    |          |
| 26 |      | 4    |      | ⊙ | 2    | 3        |
| 27 | 4    |      |      | ⊙ |      | 3        |
| 28 | 4    |      | 2    | ⊙ | 1    | 3        |
| 29 | 4    |      | 1, 3 | ⊙ | 2    |          |
| 30 | 4    | 3    |      | ⊙ | 2    |          |



| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.     | Phases of the Moon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|-------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                   |                            | D. H. M.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1                  | Sa.               | Remigius.                  | New Moon — 5. 3. 0<br>First Quarter — 11. 23. 33<br>Full Moon — 19. 2. 27<br>Last Quarter — 27. 3. 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2                  | Su.               | 18th Sunday after Trinity. | D. Other Phenomena.<br>1. ♀ ♂ Ω diff. Lat. 20'.<br>2. ☾ ♀ Ω 3 <sup>h</sup> . 12'.<br>3. ☾ ♂ Ω 7 <sup>h</sup> . 33'.<br>☾ ♀ ♀ 17 <sup>h</sup> . 50'.<br>7. ☾ ♂ ♀ 23 <sup>h</sup> . 13'.<br>8. ♀ ♀ ♀ diff. Lat. 47'.<br>☾ ♀ ♀ 2 <sup>h</sup> . 59'.<br>☾ ♀ ♀ 8 <sup>h</sup> . 5'.<br>☾ ♀ ♀ Serpentar. 22 <sup>h</sup> . 2'.<br>10. ♀ ♀ ♀ diff. Lat. 45'.<br>12. ☾ ♀ ♀ 19 <sup>h</sup> . 28.<br>14. ♀ ♀ ♀ diff. Lat. 9'.<br>15. ♀ ♀ ♀ diff. Lat. 36'.<br>☾ ♀ ♀ Im. 13 <sup>h</sup> . 26'. *<br>10' S. of ♀'s cent.<br>Em. 14 <sup>h</sup> . 13'. * 9 <sup>h</sup> . 4' S.<br>of ♀'s cent.<br>☾ ♀ ♀ 22 <sup>h</sup> . 12'.<br>20. ☾ ♀ Ceti 1 <sup>h</sup> . 46'.<br>21. ☾ ♂ ♂ 23 <sup>h</sup> . 32'.<br>22. ☾ 1 ad ♂ ♂ 1 <sup>h</sup> . 38'.<br>☾ 2 ad ♂ ♂ 2 <sup>h</sup> . 8'.<br>☾ ♀ ♂ 7 <sup>h</sup> . 21'.<br>☾ enters ♀ at 20 <sup>h</sup> . 19'.<br>25. ♀ 1 ad ♀ ♀ diff. Lat. 21'.<br>♀ ♂ ♀ diff. Lat. 44'.<br>29. ☾ ♀ Ω 12 <sup>h</sup> . 25'.<br>30. ☾ ♂ Ω 17 <sup>h</sup> . 5'.<br>31. ☾ ♀ ♀ 3 <sup>h</sup> . 26'.<br>☾ ♀ ♀ Im. 15 <sup>h</sup> . 38'. *<br>9' N. of ♀'s cent.<br>Em. 16 <sup>h</sup> . 27'. * 7' N.<br>of ♀'s cent. |
| 3                  | M.                | Faith.                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4                  | Tu.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5                  | W.                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6                  | Th.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7                  | F.                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8                  | Sa.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 9                  | Su.               | 19th Su. af. Tr. S. Denys. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 10                 | M.                | Oxf. and Camb. Terms       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 11                 | Tu.               | [begin.                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 12                 | W.                | Transf. of K. Edw. Conf.   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 13                 | Th.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 14                 | F.                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 15                 | Sa.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 16                 | Su.               | 20th Sunday after Trinity. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 17                 | M.                | Etheldred.                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 18                 | Tu.               | St. Luke.                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 19                 | W.                | 21st Sunday after Trinity. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 20                 | Th.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 21                 | F.                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 22                 | Sa.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 23                 | Su.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 24                 | M.                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 25                 | Tu.               | K. Geo. III. Acces. Crisp. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 26                 | W.                | K. Geo. III. procl. 1760.  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 27                 | Th.               | St. Simon and St. Jude.    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 28                 | F.                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 29                 | Sa.               |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 30                 | Su.               | 22d Sunday after Trinity.  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 31                 | M.                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

[110] OCTOBER 1774.

| Days of the Month. | Days of the Week. | Sun's Longitude. |     |     |    | Sun's Right Asc. in Time. |     |      | Sun's Declin. South. |     |    | Equat. of Time Sub. |    | Diff. S. |
|--------------------|-------------------|------------------|-----|-----|----|---------------------------|-----|------|----------------------|-----|----|---------------------|----|----------|
|                    |                   | S.               | D.  | M.  | S. | H.                        | M.  | S.   | D.                   | M.  | S. | M.                  | S. |          |
| 1                  | Sa.               | 6.               | 8.  | 20. | 7  | 12.                       | 30. | 37,1 | 3.                   | 18. | 33 | 10.25,4             |    | 18,6     |
| 2                  | Su.               | 6.               | 9.  | 19. | 17 | 12.                       | 34. | 15,0 | 3.                   | 41. | 53 | 10.44,0             |    | 18,3     |
| 3                  | M.                | 6.               | 10. | 18. | 29 | 12.                       | 37. | 53,2 | 4.                   | 5.  | 10 | 11. 2,3             |    | 17,9     |
| 4                  | Tu.               | 6.               | 11. | 17. | 43 | 12.                       | 41. | 31,8 | 4.                   | 28. | 24 | 11.20,2             |    | 17,6     |
| 5                  | W.                | 6.               | 12. | 16. | 59 | 12.                       | 45. | 10,7 | 4.                   | 51. | 34 | 11.37,8             |    | 17,2     |
| 6                  | Th.               | 6.               | 13. | 16. | 18 | 12.                       | 48. | 50,0 | 5.                   | 14. | 42 | 11.55,0             |    | 16,8     |
| 7                  | F.                | 6.               | 14. | 15. | 38 | 12.                       | 52. | 29,7 | 5.                   | 37. | 45 | 12.11,8             |    | 16,4     |
| 8                  | Sa.               | 6.               | 15. | 15. | 0  | 12.                       | 56. | 9,8  | 6.                   | 0.  | 44 | 12.28,2             |    | 16,0     |
| 9                  | Su.               | 6.               | 16. | 14. | 25 | 12.                       | 59. | 50,4 | 6.                   | 23. | 38 | 12.44,2             |    | 15,5     |
| 10                 | M.                | 6.               | 17. | 13. | 51 | 13.                       | 3.  | 31,4 | 6.                   | 46. | 27 | 12.59,7             |    | 15,1     |
| 11                 | Tu.               | 6.               | 18. | 13. | 18 | 13.                       | 7.  | 12,8 | 7.                   | 9.  | 10 | 13.14,8             |    | 14,6     |
| 12                 | W.                | 6.               | 19. | 12. | 48 | 13.                       | 10. | 54,7 | 7.                   | 31. | 48 | 13.29,4             |    | 14,1     |
| 13                 | Th.               | 6.               | 20. | 12. | 19 | 13.                       | 14. | 37,1 | 7.                   | 54. | 19 | 13.43,5             |    | 13,6     |
| 14                 | F.                | 6.               | 21. | 11. | 52 | 13.                       | 18. | 20,0 | 8.                   | 16. | 43 | 13.57,1             |    | 13,1     |
| 15                 | Sa.               | 6.               | 22. | 11. | 26 | 13.                       | 22. | 3,4  | 8.                   | 39. | 0  | 14.10,2             |    | 12,6     |
| 16                 | Su.               | 6.               | 23. | 11. | 2  | 13.                       | 25. | 47,4 | 9.                   | 1.  | 9  | 14.22,8             |    | 11,9     |
| 17                 | M.                | 6.               | 24. | 10. | 40 | 13.                       | 29. | 31,9 | 9.                   | 23. | 11 | 14.34,7             |    | 11,4     |
| 18                 | Tu.               | 6.               | 25. | 10. | 20 | 13.                       | 33. | 17,1 | 9.                   | 45. | 5  | 14.46,1             |    | 10,8     |
| 19                 | W.                | 6.               | 26. | 10. | 2  | 13.                       | 37. | 2,9  | 10.                  | 6.  | 50 | 14.56,9             |    | 10,1     |
| 20                 | Th.               | 6.               | 27. | 9.  | 46 | 13.                       | 40. | 49,2 | 10.                  | 28. | 26 | 15. 7,0             |    | 9,5      |
| 21                 | F.                | 6.               | 28. | 9.  | 32 | 13.                       | 44. | 36,3 | 10.                  | 49. | 53 | 15.16,5             |    | 8,8      |
| 22                 | Sa.               | 6.               | 29. | 9.  | 20 | 13.                       | 48. | 24,0 | 11.                  | 11. | 10 | 15.25,3             |    | 8,1      |
| 23                 | Su.               | 7.               | 0.  | 9.  | 10 | 13.                       | 52. | 12,4 | 11.                  | 32. | 17 | 15.33,4             |    | 7,4      |
| 24                 | M.                | 7.               | 1.  | 9.  | 2  | 13.                       | 56. | 1,5  | 11.                  | 53. | 14 | 15.40,8             |    | 6,7      |
| 25                 | Tu.               | 7.               | 2.  | 8.  | 57 | 13.                       | 59. | 51,4 | 12.                  | 14. | 0  | 15.47,5             |    | 6,0      |
| 26                 | W.                | 7.               | 3.  | 8.  | 53 | 14.                       | 3.  | 42,0 | 12.                  | 34. | 35 | 15.53,5             |    | 5,2      |
| 27                 | Th.               | 7.               | 4.  | 8.  | 52 | 14.                       | 7.  | 33,3 | 12.                  | 54. | 58 | 15.58,7             |    | 4,4      |
| 28                 | F.                | 7.               | 5.  | 8.  | 54 | 14.                       | 11. | 25,5 | 13.                  | 15. | 9  | 16. 3,1             |    | 3,6      |
| 29                 | Sa.               | 7.               | 6.  | 8.  | 58 | 14.                       | 15. | 18,4 | 13.                  | 35. | 8  | 16. 6,7             |    | 2,8      |
| 30                 | Su.               | 7.               | 7.  | 9.  | 3  | 14.                       | 19. | 12,1 | 13.                  | 54. | 54 | 16. 9,5             |    | 2,0      |
| 31                 | M.                | 7.               | 8.  | 9.  | 11 | 14.                       | 23. | 6,6  | 14.                  | 14. | 27 | 16.11,5             |    | 1,2      |

| Days of the Month. | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of the<br>Moon's<br>Node. |
|--------------------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|                    | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1                  | 16. 2,9                          | 1. 4,3                                             | 2. 27,8                            | 9.999975                               | 5. 11. 36                       |
| 7                  | 16. 4,5                          | 1. 4,6                                             | 2. 28,4                            | 9.999227                               | 5. 11. 17                       |
| 13                 | 16. 6,1                          | 1. 5,0                                             | 2. 28,9                            | 9.998462                               | 5. 10. 58                       |
| 19                 | 16. 7,8                          | 1. 5,5                                             | 2. 29,3                            | 9.997714                               | 5. 10. 39                       |
| 25                 | 16. 9,4                          | 1. 6,1                                             | 2. 29,8                            | 9.997015                               | 5. 10. 20                       |

## Eclipses of the SATELLITES of J U P I T E R.

| I. Satellite.<br>Immersions. |            | II. Satellite.<br>Immersions. |            | III. Satellite.<br>Immersions. |             |
|------------------------------|------------|-------------------------------|------------|--------------------------------|-------------|
| Days                         | H. M. S.   | Days                          | H. M. S.   | Days                           | H. M. S.    |
| 1                            | 21. 16. 12 | 3                             | 15* 11. 7  | 5                              | 9* 37. 28   |
| 3                            | 15* 45. 13 | 7                             | 4. 31. 8   | 12                             | 13* 39. 45  |
| 5                            | 10* 14. 12 | 10                            | 17. 50. 57 | 19                             | 17* 42. 2   |
| 7                            | 4. 43. 13  | 14                            | 7* 10. 41  | 26                             | 21. 43. 54  |
| 8                            | 23. 12. 11 | 17                            | 20. 30. 18 | IV. Satellite. Conj.           |             |
| 10                           | 17* 41. 9  | 21                            | 9* 49. 52  |                                |             |
| 12                           | 12* 10. 4  | 24                            | 23. 9. 20  |                                |             |
| 14                           | 6. 39. 0   | 28                            | 12* 28. 37 |                                |             |
| 16                           | 1. 7. 54   |                               |            |                                |             |
| 17                           | 19. 36. 47 |                               |            | 1                              | 17. 56 Inf. |
| 19                           | 14* 5. 38  |                               |            | 10                             | 3. 46 Sup.  |
| 21                           | 8* 34. 28  |                               |            | 18                             | 12* 10 Inf. |
| 23                           | 3. 3. 17   |                               |            | 26                             | 22. 2 Sup.  |
| 24                           | 21. 32. 4  |                               |            |                                |             |
| 26                           | 16* 0. 48  |                               |            |                                |             |
| 28                           | 10* 29. 30 |                               |            |                                |             |
| 30                           | 4. 58. 11  |                               |            |                                |             |
| 31                           | 23. 26. 49 |                               |            |                                |             |



[112] OCTOBER 1774.

| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric Lati-<br>tude. | Declina-<br>tion. | Passage<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|---------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                     |

MERCURY.

|    |           |         |           |         |         |       |
|----|-----------|---------|-----------|---------|---------|-------|
| 1  | 6. 10. 53 | 4. 1 N  | 6. 9. 5   | 1. 10 N | 2. 32 S | 0. 5  |
| 7  | 7. 0. 55  | 1. 48 N | 6. 19. 18 | 0. 33 N | 7. 3    | 0. 20 |
| 13 | 7. 18. 50 | 0. 22 S | 6. 29. 5  | 0. 7 S  | 11. 16  | 0. 33 |
| 19 | 8. 5. 37  | 2. 23   | 7. 8. 29  | 0. 48   | 15. 6   | 0. 46 |
| 25 | 8. 22. 6  | 4. 9    | 7. 17. 32 | 1. 26   | 18. 27  | 0. 59 |

VENUS.

|    |           |         |           |         |         |        |
|----|-----------|---------|-----------|---------|---------|--------|
| 1  | 4. 9. 54  | 2. 47 N | 5. 14. 23 | 1. 20 N | 7. 23 N | 22. 35 |
| 7  | 4. 19. 40 | 3. 4    | 5. 21. 47 | 1. 27   | 4. 35   | 22. 40 |
| 13 | 4. 29. 25 | 3. 16   | 5. 29. 14 | 1. 31   | 1. 42 N | 22. 46 |
| 19 | 5. 9. 10  | 3. 22   | 6. 6. 41  | 1. 32   | 1. 15 S | 22. 51 |
| 25 | 5. 18. 54 | 3. 23   | 6. 14. 10 | 1. 31   | 4. 11   | 22. 55 |

MARS.

|    |           |         |           |        |          |        |
|----|-----------|---------|-----------|--------|----------|--------|
| 1  | 2. 29. 20 | 1. 13 N | 4. 4. 8   | 1. 7 N | 20. 20 N | 19. 55 |
| 7  | 3. 2. 14  | 1. 17   | 4. 7. 35  | 1. 12  | 19. 34   | 19. 48 |
| 13 | 3. 5. 7   | 1. 21   | 4. 10. 58 | 1. 19  | 18. 46   | 19. 39 |
| 19 | 3. 7. 59  | 1. 25   | 4. 14. 16 | 1. 25  | 17. 55   | 19. 30 |
| 25 | 3. 10. 49 | 1. 28   | 4. 17. 29 | 1. 31  | 17. 3    | 19. 20 |

JUPITER.

|    |           |        |           |         |         |        |
|----|-----------|--------|-----------|---------|---------|--------|
| 1  | 1. 8. 3   | 1. 9 S | 1. 14. 56 | 1. 22 S | 15. 1 N | 14. 19 |
| 7  | 1. 8. 36  | 1. 9   | 1. 14. 23 | 1. 23   | 14. 50  | 13. 55 |
| 13 | 1. 9. 9   | 1. 8   | 1. 13. 44 | 1. 24   | 14. 39  | 13. 30 |
| 19 | 1. 9. 41  | 1. 8   | 1. 13. 0  | 1. 24   | 14. 26  | 13. 4  |
| 25 | 1. 10. 14 | 1. 7   | 1. 12. 14 | 1. 24   | 14. 12  | 12. 38 |

SATURN.

|    |           |         |          |        |         |        |
|----|-----------|---------|----------|--------|---------|--------|
| 1  | 5. 29. 40 | 2. 19 N | 6. 0. 29 | 2. 6 N | 1. 44 N | 23. 32 |
| 7  | 5. 29. 52 | 2. 20   | 6. 1. 13 | 2. 7   | 1. 27   | 23. 12 |
| 13 | 6. 0. 4   | 2. 20   | 6. 1. 57 | 2. 7   | 1. 10   | 22. 53 |
| 19 | 6. 0. 16  | 2. 20   | 6. 2. 40 | 2. 8   | 0. 54   | 22. 33 |
| 25 | 6. 0. 28  | 2. 20   | 6. 3. 21 | 2. 9   | 0. 38   | 22. 13 |

# OCTOBER 1774. [113]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D. M. S.                 |
| 1                  | Sa.               | 4. 19. 7. 52              | 4. 25. 18. 42                 | 2. 7. 12 S               | 1. 35. 27 S              |
| 2                  | Su.               | 5. 1. 33. 38              | 5. 7. 52. 59                  | 1. 2. 12 S               | 0. 27. 49 S              |
| 3                  | M.                | 5. 14. 17. 7              | 5. 20. 46. 6                  | 0. 7. 17 N               | 0. 42. 44 N              |
| 4                  | Tu.               | 5. 27. 20. 2              | 6. 3. 58. 51                  | 1. 18. 0                 | 1. 52. 40                |
| 5                  | W.                | 6. 10. 42. 31             | 6. 17. 30. 48                 | 2. 26. 6                 | 2. 57. 51                |
| 6                  | Th.               | 6. 24. 23. 22             | 7. 1. 19. 42                  | 3. 27. 22                | 3. 54. 0                 |
| 7                  | F.                | 7. 8. 19. 35              | 7. 15. 22. 18                 | 4. 17. 23                | 4. 36. 59                |
| 8                  | Sa.               | 7. 22. 27. 23             | 7. 29. 34. 11                 | 4. 52. 29                | 5. 3. 30                 |
| 9                  | Su.               | 8. 6. 42. 13              | 8. 13. 50. 50                 | 5. 9. 52                 | 5. 11. 25                |
| 10                 | M.                | 8. 20. 59. 39             | 8. 28. 8. 0                   | 5. 8. 9                  | 5. 0. 6                  |
| 11                 | Tu.               | 9. 5. 15. 41              | 9. 12. 22. 20                 | 4. 47. 27                | 4. 30. 22                |
| 12                 | W.                | 9. 19. 27. 39             | 9. 26. 31. 19                 | 4. 9. 10                 | 3. 44. 18                |
| 13                 | Th.               | 10. 3. 33. 19             | 10. 10. 33. 21                | 3. 16. 8                 | 2. 45. 8                 |
| 14                 | F.                | 10. 17. 31. 27            | 10. 24. 27. 22                | 2. 11. 50                | 1. 36. 45                |
| 15                 | Sa.               | 11. 1. 21. 9              | 11. 8. 12. 31                 | 1. 0. 28 N               | 0. 23. 32 N              |
| 16                 | Su.               | 11. 15. 1. 29             | 11. 21. 47. 55                | 0. 13. 29 S              | 0. 50. 3 S               |
| 17                 | M.                | 11. 28. 31. 38            | 0. 5. 12. 32                  | 1. 25. 36                | 1. 59. 42                |
| 18                 | Tu.               | 0. 11. 50. 29             | 0. 18. 25. 14                 | 2. 31. 54                | 3. 1. 43                 |
| 19                 | W.                | 0. 24. 56. 48             | 1. 1. 24. 57                  | 3. 28. 53                | 3. 53. 5                 |
| 20                 | Th.               | 1. 7. 49. 40              | 1. 14. 10. 50                 | 4. 14. 6                 | 4. 31. 41                |
| 21                 | F.                | 1. 20. 28. 26             | 1. 26. 42. 36                 | 4. 45. 49                | 4. 56. 23                |
| 22                 | Sa.               | 2. 2. 53. 21              | 2. 9. 1. 0                    | 5. 3. 20                 | 5. 6. 46                 |
| 23                 | Su.               | 2. 15. 5. 30              | 2. 21. 7. 25                  | 5. 6. 37                 | 5. 3. 6                  |
| 24                 | M.                | 2. 27. 7. 1               | 3. 3. 4. 43                   | 4. 56. 14                | 4. 46. 13                |
| 25                 | Tu.               | 3. 9. 1. 4                | 3. 14. 56. 26                 | 4. 33. 5                 | 4. 17. 6                 |
| 26                 | W.                | 3. 20. 51. 35             | 3. 26. 46. 59                 | 3. 58. 20                | 3. 37. 3                 |
| 27                 | Th.               | 4. 2. 43. 17              | 4. 8. 41. 13                  | 3. 13. 16                | 2. 47. 21                |
| 28                 | F.                | 4. 14. 41. 24             | 4. 20. 44. 26                 | 2. 19. 22                | 1. 49. 39                |
| 29                 | Sa.               | 4. 26. 51. 5              | 5. 3. 1. 53                   | 1. 18. 23                | 0. 45. 52 S              |
| 30                 | Su.               | 5. 9. 17. 27              | 5. 15. 38. 19                 | 0. 12. 26 S              | 0. 21. 37 N              |
| 31                 | M.                | 5. 22. 4. 57              | 5. 28. 37. 34                 | 0. 55. 54 N              | 1. 20. 53                |

| [114] OCTOBER 1774. |                   |          |                         |                           |                           |                        |                        |
|---------------------|-------------------|----------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|
| Days of the Month.  | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Ascen. at Midn. | D's Declinat. at Noon. | D's Declinat. at Midn. |
|                     |                   |          | H. M.                   | D. M.                     | D. M.                     | D. M.                  | D. M.                  |
| 1                   | Sa.               | 27       | 21. 34                  | 140. 53                   | 147. 3                    | 13. 4 N                | 11. 36 N               |
| 2                   | Su.               | 28       | 22. 21                  | 153. 12                   | 159. 23                   | 9. 58                  | 8. 11                  |
| 3                   | M.                | 29       | 23. 9                   | 165. 34                   | 171. 48                   | 6. 18                  | 4. 19                  |
| 4                   | Tu.               | 30       | 23. 58                  | 178. 4                    | 184. 24                   | 2. 15 N                | 0. 8 N                 |
| 5                   | W.                | 1        | 6                       | 190. 48                   | 197. 17                   | 2. 0 S                 | 4. 9 S                 |
| 6                   | Th.               | 2        | 0. 48                   | 203. 52                   | 210. 33                   | 6. 15                  | 8. 17                  |
| 7                   | F.                | 3        | 1. 41                   | 217. 21                   | 224. 17                   | 10. 14                 | 12. 2                  |
| 8                   | Sa.               | 4        | 2. 35                   | 231. 19                   | 238. 29                   | 13. 41                 | 15. 8                  |
| 9                   | Su.               | 5        | 3. 31                   | 245. 46                   | 253. 8                    | 16. 22                 | 17. 20                 |
| 10                  | M.                | 6        | 4. 29                   | 260. 34                   | 268. 2                    | 18. 2                  | 18. 27                 |
| 11                  | Tu.               | 7        | 5. 28                   | 275. 32                   | 283. 1                    | 18. 34                 | 18. 24                 |
| 12                  | W.                | 8        | 6. 26                   | 290. 27                   | 297. 48                   | 17. 56                 | 17. 12                 |
| 13                  | Th.               | 9        | 7. 22                   | 305. 5                    | 312. 14                   | 16. 12                 | 14. 58                 |
| 14                  | F.                | 10       | 8. 16                   | 319. 17                   | 326. 13                   | 13. 30                 | 11. 52                 |
| 15                  | Sa.               | 11       | 9. 9                    | 333. 1                    | 339. 43                   | 10. 4                  | 8. 8                   |
| 16                  | Su.               | 12       | 9. 59                   | 346. 18                   | 352. 48                   | 6. 7                   | 4. 1 S                 |
| 17                  | M.                | 13       | 10. 48                  | 359. 13                   | 5. 34                     | 1. 54 S                | 0. 14 N                |
| 18                  | Tu.               | 14       | 11. 37                  | 11. 53                    | 18. 9                     | 2. 21 N                | 4. 26                  |
| 19                  | W.                | 15       | 12. 24                  | 24. 23                    | 30. 37                    | 6. 26                  | 8. 20                  |
| 20                  | Th.               | 16       | 13. 12                  | 36. 51                    | 43. 5                     | 10. 8                  | 11. 47                 |
| 21                  | F.                | 17       | 14. 0                   | 49. 20                    | 55. 35                    | 13. 18                 | 14. 38                 |
| 22                  | Sa.               | 18       | 14. 48                  | 61. 51                    | 68. 8                     | 15. 48                 | 16. 46                 |
| 23                  | Su.               | 19       | 15. 36                  | 74. 25                    | 80. 42                    | 17. 33                 | 18. 8                  |
| 24                  | M.                | 20       | 16. 23                  | 86. 58                    | 93. 14                    | 18. 30                 | 18. 40                 |
| 25                  | Tu.               | 21       | 17. 11                  | 99. 29                    | 105. 43                   | 18. 37                 | 18. 22                 |
| 26                  | W.                | 22       | 17. 58                  | 111. 55                   | 118. 6                    | 17. 55                 | 17. 16                 |
| 27                  | Th.               | 23       | 18. 45                  | 124. 15                   | 130. 22                   | 16. 26                 | 15. 25                 |
| 28                  | F.                | 24       | 19. 31                  | 136. 28                   | 142. 33                   | 14. 13                 | 12. 52                 |
| 29                  | Sa.               | 25       | 20. 17                  | 148. 37                   | 154. 42                   | 11. 21                 | 9. 41                  |
| 30                  | Su.               | 26       | 21. 4                   | 160. 48                   | 166. 55                   | 7. 54                  | 6. 0                   |
| 31                  | M.                | 27       | 21. 51                  | 173. 6                    | 179. 20                   | 4. 0                   | 1. 55                  |



## OCTOBER 1774.

[115]

| Days of the Month. | Days of the Week. | Semidr.<br>D at Noon. | Semidr.<br>D at Midnight. | Hor. Par.<br>D at Noon. | Hor. Par.<br>D at Midnight. | Proport. Lo-<br>gar. at Noon. | Proport. Lo-<br>gar. at Mid. |
|--------------------|-------------------|-----------------------|---------------------------|-------------------------|-----------------------------|-------------------------------|------------------------------|
|                    |                   | M. S.                 | M. S.                     | M. S.                   | M. S.                       |                               |                              |
| 1                  | Sa.               | 15. 6                 | 15. 10                    | 55. 24                  | 55. 40                      | 5118                          | 5097                         |
| 2                  | Su.               | 15. 15                | 15. 21                    | 55. 58                  | 56. 17                      | 5073                          | 5049                         |
| 3                  | M.                | 15. 26                | 15. 31                    | 56. 37                  | 56. 57                      | 5023                          | 4998                         |
| 4                  | Tu.               | 15. 37                | 15. 42                    | 57. 18                  | 57. 37                      | 4971                          | 4947                         |
| 5                  | W.                | 15. 47                | 15. 52                    | 57. 56                  | 58. 14                      | 4923                          | 4901                         |
| 6                  | Th.               | 15. 56                | 16. 0                     | 58. 30                  | 58. 44                      | 4881                          | 4864                         |
| 7                  | F.                | 16. 4                 | 16. 7                     | 58. 57                  | 59. 8                       | 4848                          | 4834                         |
| 8                  | Sa.               | 16. 9                 | 16. 11                    | 59. 17                  | 59. 24                      | 4823                          | 4815                         |
| 9                  | Su.               | 16. 13                | 16. 13                    | 59. 29                  | 59. 32                      | 4809                          | 4805                         |
| 10                 | M.                | 16. 14                | 16. 13                    | 59. 33                  | 59. 33                      | 4804                          | 4804                         |
| 11                 | Tu.               | 16. 13                | 16. 12                    | 59. 31                  | 59. 28                      | 4806                          | 4810                         |
| 12                 | W.                | 16. 11                | 16. 10                    | 59. 24                  | 59. 19                      | 4815                          | 4821                         |
| 13                 | Th.               | 16. 8                 | 16. 6                     | 59. 12                  | 59. 5                       | 4830                          | 4838                         |
| 14                 | F.                | 16. 4                 | 16. 1                     | 58. 57                  | 58. 48                      | 4848                          | 4859                         |
| 15                 | Sa.               | 15. 58                | 15. 55                    | 58. 37                  | 58. 26                      | 4872                          | 4886                         |
| 16                 | Su.               | 15. 52                | 15. 49                    | 58. 14                  | 58. 1                       | 4901                          | 4917                         |
| 17                 | M.                | 15. 45                | 15. 41                    | 57. 47                  | 57. 32                      | 4934                          | 4953                         |
| 18                 | Tu.               | 15. 37                | 15. 32                    | 57. 17                  | 57. 1                       | 4972                          | 4992                         |
| 19                 | W.                | 15. 28                | 15. 23                    | 56. 44                  | 56. 27                      | 5014                          | 5036                         |
| 20                 | Th.               | 15. 19                | 15. 14                    | 56. 11                  | 55. 55                      | 5056                          | 5077                         |
| 21                 | F.                | 15. 10                | 15. 6                     | 55. 39                  | 55. 24                      | 5098                          | 5118                         |
| 22                 | Sa.               | 15. 2                 | 14. 59                    | 55. 11                  | 54. 58                      | 5134                          | 5152                         |
| 23                 | Su.               | 14. 56                | 14. 53                    | 54. 47                  | 54. 38                      | 5166                          | 5178                         |
| 24                 | M.                | 14. 51                | 14. 50                    | 54. 30                  | 54. 26                      | 5189                          | 5194                         |
| 25                 | Tu.               | 14. 49                | 14. 49                    | 54. 23                  | 54. 22                      | 5198                          | 5199                         |
| 26                 | W.                | 14. 49                | 14. 51                    | 54. 24                  | 54. 29                      | 5197                          | 5190                         |
| 27                 | Th.               | 14. 53                | 14. 55                    | 54. 36                  | 54. 45                      | 5181                          | 5169                         |
| 28                 | F.                | 14. 58                | 15. 2                     | 54. 57                  | 55. 12                      | 5153                          | 5133                         |
| 29                 | Sa.               | 15. 7                 | 15. 12                    | 55. 29                  | 55. 48                      | 5111                          | 5086                         |
| 30                 | Su.               | 15. 18                | 15. 24                    | 56. 9                   | 56. 32                      | 5059                          | 5029                         |
| 31                 | M.                | 15. 31                | 15. 38                    | 56. 55                  | 57. 20                      | 5000                          | 4968                         |

[116] OCTOBER 1774.

Distances of J's Center from ☉, and from Stars east of her.

| Days. | Stars Names.  | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.   |
|-------|---------------|-------------|-------------|-------------|------------|
|       |               | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.   |
| 1     | The Sun.      | 49. 14. 16  | 47. 49. 12  | 46. 23. 50  | 44. 58. 15 |
| 7     | α Aquilæ.     | 79. 25. 15  | 77. 50. 47  | 76. 16. 20  | 74. 41. 54 |
| 8     |               | 60. 51. 17  | 65. 17. 43  | 63. 44. 26  | 62. 11. 27 |
| 9     |               | 54. 32. 51  | 53. 2. 48   | 51. 33. 28  | 50. 4. 56  |
| 10    | β Capricorni. | 39. 45. 38  | 37. 58. 58  | 36. 12. 20  | 34. 25. 44 |
| 11    |               | 25. 33. 12  | 23. 46. 51  | 22. 0. 34   | 20. 14. 22 |
| 12    | α Pegasi.     | 61. 12. 22  | 59. 34. 59  | 57. 57. 59  | 56. 21. 22 |
| 13    |               | 48. 25. 41  | 46. 52. 23  | 45. 19. 50  | 43. 48. 7  |
| 14    |               | 36. 25. 12  |             |             |            |
| 14    | α Arietis.    | 76. 48. 47  | 75. 7. 40   | 73. 26. 41  | 71. 45. 52 |
| 15    |               | 63. 24. 41  | 61. 45. 8   | 60. 5. 52   | 58. 26. 53 |
| 16    |               | 50. 16. 41  | 48. 39. 45  | 47. 3. 16   | 45. 27. 14 |
| 17    | Aldebaran.    | 68. 5. 2    | 66. 24. 12  | 64. 43. 33  | 63. 3. 7   |
| 18    |               | 54. 43. 57  | 53. 4. 46   | 51. 25. 48  | 49. 47. 4  |
| 19    |               | 41. 36. 41  | 39. 59. 18  | 38. 22. 10  | 36. 45. 16 |
| 20    |               | 28. 44. 19  | 27. 8. 51   | 25. 33. 37  | 23. 58. 38 |
| 21    |               | 16. 7. 21   |             |             |            |
| 21    | Pollux.       | 60. 37. 0   | 59. 5. 35   | 57. 34. 28  | 56. 3. 39  |
| 22    |               | 48. 34. 17  | 47. 5. 22   | 45. 36. 46  | 44. 8. 31  |
| 23    |               | 36. 53. 12  |             |             |            |
| 23    | Regulus.      | 71. 43. 29  | 70. 13. 10  | 68. 43. 0   | 67. 13. 1  |
| 24    |               | 59. 45. 6   | 58. 15. 53  | 56. 46. 45  | 55. 17. 43 |
| 25    |               | 47. 53. 39  | 46. 25. 2   | 44. 56. 26  | 43. 27. 52 |
| 26    |               | 36. 5. 1    | 34. 36. 24  | 33. 7. 45   | 31. 39. 4  |
| 27    |               | 24. 14. 42  | 22. 45. 35  | 21. 16. 22  | 19. 47. 3  |
| 24    | The Sun.      |             |             | 121. 10. 26 | 119. 49. 4 |
| 25    |               | 113. 3. 15  | 111. 42. 16 | 110. 21. 18 | 109. 0. 21 |
| 26    |               | 102. 15. 30 | 100. 54. 29 | 99. 33. 24  | 98. 12. 16 |
| 27    |               | 91. 25. 27  | 90. 3. 47   | 88. 41. 58  | 87. 20. 2  |
| 28    |               | 80. 27. 58  | 79. 5. 2    | 77. 41. 53  | 76. 18. 31 |
| 29    |               | 69. 18. 13  | 67. 53. 24  | 66. 28. 18  | 65. 2. 55  |
| 30    |               | 57. 51. 36  | 56. 24. 24  | 54. 56. 53  | 53. 29. 2  |
| 31    |               | 46. 4. 40   | 44. 34. 46  | 43. 4. 33   | 41. 34. 0  |

# OCTOBER 1774. [117]

Distances of J's Center from ☉, and from Stars east of her.

| Days | Stars Names.       | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|------|--------------------|-------------|-------------|-------------|-------------|
|      |                    | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1    | The Sun.           | 43. 32. 24  | 42. 6. 17   | 40. 39. 55  | 39. 13. 17  |
| 6    |                    | 85. 42. 40  | 84. 8. 26   | 82. 34. 6   | 80. 59. 42  |
| 7    | α Aquilæ.          | 73. 7. 32   | 71. 33. 15  | 69. 59. 6   | 68. 25. 6   |
| 8    |                    | 60. 38. 49  | 59. 6. 35   | 57. 34. 49  | 56. 3. 33   |
| 9    |                    | 48. 37. 15  |             |             |             |
| 9    | β Capri-<br>corni. | 46. 52. 35  | 45. 5. 47   | 43. 19. 2   | 41. 32. 19  |
| 10   |                    | 32. 39. 9   | 30. 52. 36  | 29. 6. 5    | 27. 19. 37  |
| 11   |                    | 18. 28. 15  |             |             |             |
| 11   | α Pegasi.          | 67. 45. 7   | 66. 6. 31   | 64. 28. 10  | 62. 50. 7   |
| 12   |                    | 54. 45. 12  | 53. 9. 29   | 51. 34. 18  | 49. 59. 41  |
| 13   |                    | 42. 17. 20  | 40. 47. 33  | 39. 18. 53  | 37. 51. 25  |
| 14   | α Arietis.         | 70. 5. 13   | 68. 24. 45  | 66. 44. 30  | 65. 4. 29   |
| 15   |                    | 56. 48. 11  | 55. 9. 46   | 53. 31. 43  | 51. 54. 1   |
| 16   |                    | 43. 51. 41  |             |             |             |
| 16   | Aldeba-<br>ran.    | 74. 50. 13  | 73. 8. 39   | 71. 27. 16  | 69. 46. 4   |
| 17   |                    | 61. 22. 52  | 59. 42. 49  | 58. 2. 59   | 56. 23. 22  |
| 18   |                    | 48. 8. 33   | 46. 30. 14  | 44. 52. 9   | 43. 14. 18  |
| 19   |                    | 35. 8. 37   | 33. 32. 11  | 31. 55. 59  | 30. 20. 2   |
| 20   |                    | 22. 23. 54  | 20. 49. 24  | 19. 15. 8   | 17. 41. 7   |
| 21   | Pollux.            | 54. 33. 9   | 53. 2. 57   | 51. 33. 5   | 50. 3. 31   |
| 22   |                    | 42. 40. 38  | 41. 13. 9   | 39. 46. 4   | 38. 19. 25  |
| 23   | Regulus.           | 65. 43. 10  | 64. 13. 28  | 62. 43. 53  | 61. 14. 26  |
| 24   |                    | 53. 48. 46  | 52. 19. 54  | 50. 51. 5   | 49. 22. 20  |
| 25   |                    | 41. 59. 19  | 40. 30. 45  | 39. 2. 11   | 37. 33. 36  |
| 26   |                    | 30. 10. 20  | 28. 41. 32  | 27. 12. 40  | 25. 43. 43  |
| 27   |                    | 18. 17. 38  |             |             |             |
| 24   | The Sun.           | 118. 27. 47 | 117. 6. 34  | 115. 45. 24 | 114. 24. 18 |
| 25   |                    | 107. 39. 25 | 106. 18. 28 | 104. 57. 30 | 103. 36. 30 |
| 26   |                    | 96. 51. 5   | 95. 29. 49  | 94. 8. 27   | 92. 47. 0   |
| 27   |                    | 85. 57. 57  | 84. 35. 43  | 83. 13. 18  | 81. 50. 43  |
| 28   |                    | 74. 54. 57  | 73. 31. 8   | 72. 7. 5    | 70. 42. 46  |
| 29   |                    | 63. 37. 16  | 62. 11. 19  | 60. 45. 3   | 59. 18. 29  |
| 30   |                    | 52. 0. 51   | 50. 32. 19  | 49. 3. 26   | 47. 34. 13  |
| 31   |                    | 40. 3. 6    |             |             |             |



Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  west of her.

| Days. | Stars Names.             | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|--------------------------|-------------|-------------|-------------|-------------|
|       |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | Pollux.                  | 30. 16. 21  | 31. 42. 36  | 33. 9. 34   | 34. 37. 14  |
| 2     |                          | 42. 4. 39   | 43. 35. 44  | 45. 7. 18   | 46. 39. 20  |
| 3     |                          | 54. 26. 13  | 56. 0. 50   | 57. 35. 51  | 59. 11. 15  |
| 8     | The Sun.                 |             | 39. 7. 15   | 40. 45. 52  | 42. 24. 35  |
| 9     |                          | 50. 39. 18  | 52. 18. 23  | 53. 57. 50  | 55. 36. 39  |
| 10    |                          | 63. 52. 30  | 65. 31. 46  | 67. 10. 54  | 68. 50. 1   |
| 11    |                          | 77. 5. 8    | 78. 44. 3   | 80. 22. 54  | 82. 1. 43   |
| 12    |                          | 90. 14. 49  | 91. 53. 12  | 93. 31. 30  | 95. 9. 44   |
| 13    |                          | 103. 19. 40 | 104. 57. 22 | 106. 34. 57 | 108. 12. 27 |
| 14    |                          | 116. 18. 20 | 117. 55. 10 | 119. 31. 51 | 121. 8. 25  |
| 12    | Antares.                 | 43. 40. 41  | 45. 23. 33  | 47. 6. 30   | 48. 49. 32  |
| 13    |                          | 57. 25. 31  | 59. 8. 43   | 60. 51. 54  | 62. 35. 3   |
| 14    |                          | 71. 10. 12  |             |             |             |
| 14    | $\beta$ Capri-<br>corni. | 16. 46. 0   | 18. 30. 14  | 20. 14. 23  | 21. 58. 27  |
| 15    |                          | 30. 37. 16  | 32. 20. 39  | 34. 3. 54   | 35. 47. 1   |
| 16    |                          | 44. 20. 26  | 46. 2. 39   | 47. 44. 42  | 49. 26. 36  |
| 17    | $\alpha$ Aquila.         | 64. 52. 38  | 66. 21. 20  | 67. 50. 8   | 69. 19. 3   |
| 18    |                          | 76. 44. 0   | 78. 12. 52  | 79. 41. 39  | 81. 10. 21  |
| 19    |                          | 88. 31. 48  |             |             |             |
| 19    | $\alpha$ Pegasi.         | 40. 59. 31  | 42. 22. 59  | 43. 47. 0   | 45. 11. 31  |
| 20    |                          | 52. 19. 20  | 53. 45. 34  | 55. 11. 56  | 56. 38. 24  |
| 21    |                          | 63. 51. 18  | 65. 17. 52  | 66. 44. 23  | 68. 10. 51  |
| 22    |                          | 75. 21. 51  | 76. 47. 45  | 78. 13. 33  | 79. 39. 15  |
| 23    | $\alpha$ Arietis.        | 43. 8. 2    | 44. 32. 42  | 45. 57. 30  | 47. 22. 25  |
| 24    |                          | 54. 28. 8   | 55. 53. 27  | 57. 18. 48  | 58. 44. 10  |
| 25    | Aldeba-<br>ran.          | 32. 15. 25  | 33. 44. 7   | 35. 12. 47  | 36. 41. 26  |
| 26    |                          | 44. 4. 47   | 45. 33. 31  | 47. 2. 17   | 48. 31. 7   |
| 27    |                          | 55. 56. 28  | 57. 25. 51  | 58. 55. 22  | 60. 25. 2   |
| 28    |                          | 67. 55. 44  |             |             |             |
| 28    | Pollux.                  | 26. 7. 43   | 27. 30. 26  | 28. 54. 3   | 30. 18. 31  |
| 29    |                          | 37. 31. 24  | 38. 59. 47  | 40. 28. 42  | 41. 58. 7   |
| 30    |                          | 49. 32. 35  |             |             |             |
| 30    | Regulus.                 | 12. 36. 33  | 14. 10. 48  | 15. 45. 32  | 17. 20. 44  |
| 31    |                          | 25. 23. 11  | 27. 0. 53   | 28. 38. 58  | 30. 17. 28  |
| N. 1  |                          | 38. 35. 58  |             |             |             |

Distances of ♀'s Center from Stars, and from ☉ west of her.

| Days. | Stars Names.       | 12 Hours.   | 15 Hours.  | 18 Hours.  | 21 Hours.   |
|-------|--------------------|-------------|------------|------------|-------------|
|       |                    | D. M. S.    | D. M. S.   | D. M. S.   | D. M. S.    |
| 1     | Pollux.            | 36. 5. 33   | 37. 34. 29 | 39. 4. 0   | 40. 34. 4   |
| 2     |                    | 48. 11. 51  | 49. 44. 48 | 51. 18. 11 | 52. 51. 59  |
| 3     |                    | 60. 47. 0   |            |            |             |
| 8     | The Sun.           | 44. 3. 24   | 45. 42. 17 | 47. 21. 14 | 49. 0. 14   |
| 9     |                    | 57. 15. 49  | 58. 55. 1  | 60. 34. 12 | 62. 13. 24  |
| 10    |                    | 70. 29. 6   | 72. 8. 10  | 73. 47. 11 | 75. 26. 11  |
| 11    |                    | 83. 40. 28  | 85. 19. 10 | 86. 57. 47 | 88. 36. 20  |
| 12    |                    | 96. 47. 53  | 98. 25. 58 | 100. 3. 57 | 101. 41. 52 |
| 13    |                    | 109. 49. 50 | 111. 27. 8 | 113. 4. 19 | 114. 41. 23 |
| 12    | Antares.           | 50. 32. 40  | 52. 15. 50 | 53. 59. 2  | 55. 42. 16  |
| 13    |                    | 64. 18. 11  | 66. 1. 16  | 67. 44. 18 | 69. 27. 17  |
| 14    | ♄ Capri-<br>corni. | 23. 42. 26  | 25. 26. 19 | 27. 10. 5  | 28. 53. 44  |
| 15    |                    | 37. 30. 0   | 39. 12. 50 | 40. 55. 31 | 42. 38. 3   |
| 16    |                    | 51. 8. 19   |            |            |             |
| 16    | α Aquilæ.          | 58. 59. 43  | 60. 27. 37 | 61. 55. 45 | 63. 24. 6   |
| 17    |                    | 70. 48. 2   | 72. 17. 3  | 73. 46. 3  | 75. 15. 2   |
| 18    |                    | 82. 38. 56  | 84. 7. 23  | 85. 35. 41 | 87. 3. 50   |
| 19    | α Pegasi.          | 46. 36. 27  | 48. 1. 46  | 49. 27. 23 | 50. 53. 15  |
| 20    |                    | 58. 4. 56   | 59. 31. 31 | 60. 58. 6  | 62. 24. 42  |
| 21    |                    | 69. 37. 15  | 71. 3. 32  | 72. 29. 44 | 73. 55. 51  |
| 22    |                    | 81. 4. 49   |            |            |             |
| 22    | α Arietis.         | 37. 31. 30  | 38. 55. 17 | 40. 19. 19 | 41. 43. 34  |
| 23    |                    | 48. 47. 25  | 50. 12. 30 | 51. 37. 39 | 53. 2. 52   |
| 24    |                    | 60. 9. 34   |            |            |             |
| 24    | Aldeba-<br>ran.    | 26. 20. 3   | 27. 49. 0  | 29. 17. 52 | 30. 46. 40  |
| 25    |                    | 38. 10. 4   | 39. 38. 43 | 41. 7. 23  | 42. 36. 4   |
| 26    |                    | 50. 0. 1    | 51. 28. 59 | 52. 58. 3  | 54. 27. 12  |
| 27    |                    | 61. 54. 50  | 63. 24. 48 | 64. 54. 56 | 66. 25. 14  |
| 28    | Pollux.            | 31. 43. 45  | 33. 9. 42  | 34. 36. 20 | 36. 3. 34   |
| 29    |                    | 43. 28. 3   | 44. 58. 29 | 46. 29. 24 | 48. 0. 46   |
| 30    | Regulus.           | 18. 56. 23  | 20. 32. 28 | 22. 8. 58  | 23. 45. 53  |
| 31    |                    | 31. 56. 22  | 33. 35. 40 | 35. 15. 22 | 36. 55. 28  |

[120] OCTOBER 1774.

Configurations of the SATELLITES of JUPITER  
at 8 o'clock in the Evening.

|    |       |                   |   |                              |       |
|----|-------|-------------------|---|------------------------------|-------|
| 1  |       | 3♂ <sup>2.4</sup> | ⊙ | .1                           |       |
| 2  |       | 1.                | ⊙ | .4.3.2                       |       |
| 3  |       |                   | ⊙ | 1♂ <sup>2</sup>              | .4.3  |
| 4  |       | 2.                | ⊙ |                              | 3. .4 |
| 5  |       |                   | ⊙ | 1.1.                         |       |
| 6  |       | 3.                | ⊙ | .2                           | .4    |
| 7  | 1♂ 2♂ | 3.                | ⊙ |                              | 4.    |
| 8  |       | .3.2              | ⊙ | .1                           | 4.    |
| 9  |       | 1.                | ⊙ | .3.2                         | 4.    |
| 10 | 4♂    |                   | ⊙ | 2.                           | .1    |
| 11 |       | 4. 2.             | ⊙ |                              | 3.    |
| 12 |       | 4.                | ⊙ | 1♂ <sup>3</sup>              |       |
| 13 | 4.    | 3.                | ⊙ | .2                           |       |
| 14 | 4.    |                   | ⊙ |                              | 2♂ 1♂ |
| 15 | .4    | .3.2              | ⊙ | .1                           |       |
| 16 | 3.0   | .4                | ⊙ | .2                           |       |
| 17 |       | .4                | ⊙ | .1 2.                        | .3    |
| 18 |       | 2.                | ⊙ |                              | 3.    |
| 19 |       |                   | ⊙ | 1♂ <sup>3</sup> <sup>4</sup> |       |
| 20 |       | 3.                | ⊙ | .2                           | .4    |
| 21 |       | 3.                | ⊙ | 1.2.                         | .4    |
| 22 | 1.0   | 2.                | ⊙ |                              | .4    |
| 23 |       | 1.                | ⊙ | .2                           | 4.    |
| 24 |       |                   | ⊙ | .1 2.                        | .3 4. |
| 25 |       | 1.2.              | ⊙ |                              | 3.4.  |
| 26 |       | .2                | ⊙ | 4♂ <sup>1</sup> <sup>3</sup> |       |
| 27 |       | 3.4.              | ⊙ | .2                           |       |
| 28 |       | 3.4.              | ⊙ | 1. 2.                        |       |
| 29 | 1♂    | 4.                | ⊙ |                              |       |
| 30 | 4.    |                   | ⊙ |                              | 2.0   |
| 31 | .4    |                   | ⊙ | .1 2.                        | .3    |



# NOVEMBER 1774. [121]

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c.                     | Phases of the Moon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------|-------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                   |                                            | D.H.M.<br>New Moon — 3. 14. 51<br>First Quarter — 10. 7. 7<br>Full Moon — 17. 18. 16<br>Last Quarter — 25. 22. 58                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1                  | Tu.               | <i>All Saints.</i>                         | Other Phenomena.<br>D.<br>1. ☾ ♄ 3 <sup>h</sup> . 7'.<br>☾ ♄ 17 <sup>h</sup> . 21'.<br>5. ☾ ♄ Serpentar. 5 <sup>h</sup> . 55'.<br>7. ♄ ♄ diff. Lat. 13'.<br>9. ♄ ♄ diff. Lat. 46'.<br>11. ☾ ♄ 18 <sup>h</sup> . 1'.<br>12. ☾ ♄ 3 <sup>h</sup> . 56'.<br>16. ♄ ♄ diff. Lat. 37'.<br>17. ♄ ♄ Ophiu. diff. Lat. 36'.<br>18. ☾ ♄ ♄ Im. 5 <sup>h</sup> . 51'. *<br>1/2 S. of ♄'s cent.<br>Em. 6 <sup>h</sup> . 48'. * 1/2 S.<br>of ♄'s cent.<br>☾ 1 ad ♄ 8 <sup>h</sup> . 15'.<br>☾ 2 ad ♄ 8 <sup>h</sup> . 45'.<br>☾ ♄ Im. 15 <sup>h</sup> . 22'. *<br>1/2 N. of ♄'s cent.<br>Em. 16 <sup>h</sup> . 35'. * 1 1/2 N.<br>of ♄'s cent.<br>21. ☾ enters ♄ at 16 <sup>h</sup> . 28'.<br>24. ♄ Stationary.<br>25. ☾ ♄ 20 <sup>h</sup> . 50'.<br>26. ♄ ♄ diff. Lat. 46'.<br>☾ ♄ 12 <sup>h</sup> . 45'.<br>☾ ♄ 20 <sup>h</sup> . 48'.<br>27. ☾ ♄ 12 <sup>h</sup> . 47'.<br>28. ♄ ♄ diff. Lat. 35'.<br>☾ ♄ 3 <sup>h</sup> . 11'.<br>☾ ♄ 12 <sup>h</sup> . 59'.<br>29. ☾ ♄ 3 <sup>h</sup> . 29'.<br>30. ♄ ♄ diff. Lat. 24'.<br>☾ ♄ 7 <sup>h</sup> . 49'. |
| 2                  | W.                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3                  | Th.               | On mor. of All Souls, 1 [ret. D.]          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4                  | F.                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5                  | Sa.               | <i>Powder Plot, 1605.</i><br>[Ter. begins. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6                  | Su.               | 23d <i>Su. aft. Tr.</i> Leon. M.           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7                  | M.                | <i>D. of Cumberland born.</i>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8                  | Tu.               |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 9                  | W.                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10                 | Th.               |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 11                 | F.                | S. Martin. [C. Ter. div. m.]               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 12                 | Sa.               | On mor. of S. Mart. 2 ret.                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 13                 | Su.               | 24th <i>Su. aft. Tr.</i> Britius.          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 14                 | M.                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 15                 | Tu.               | Machutus.                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 16                 | W.                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 17                 | Th.               | Hugh Ep. of Lincoln.                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 18                 | F.                | In 8 days of S. Martin,                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 19                 | Sa.               | [3 ret.]                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 20                 | Su.               | 25th Sunday after Trinity.                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 21                 | M.                | [Edmund]                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 22                 | Tu.               | Cecilia.                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 23                 | W.                | St. Clement.                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 24                 | Th.               |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 25                 | F.                | <i>D. of Glo. bc. Cath.</i> In 15          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 26                 | Sa.               | [days of S. Mart. 4 ret.]                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 27                 | Su.               | <i>Advent Sunday.</i>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 28                 | M.                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 29                 | Tu.               | [Wales born 1719,                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 30                 | W.                | St. Andrew. Pri. Dow. of                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

[122] NOVEMBER 1774.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Sub. | Diff. |
|--------------------|-------------------|------------------|---------------------------|----------------------|----------------------|-------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.                | S.    |
| 1                  | Tu.               | 7. 9. 9. 23      | 14. 27. 2, 0              | 14. 33. 46           | 16. 12, 7            | 0, 4  |
| 2                  | W.                | 7. 10. 9. 34     | 14. 30. 58, 1             | 14. 52. 51           | 16. 13, 1            | 0, 4  |
| 3                  | Th.               | 7. 11. 9. 48     | 14. 34. 55, 1             | 15. 11. 41           | 16. 12, 7            | 1, 2  |
| 4                  | F.                | 7. 12. 10. 4     | 14. 38. 52, 9             | 15. 30. 17           | 16. 11, 5            | 2, 0  |
| 5                  | Sa.               | 7. 13. 10. 22    | 14. 42. 51, 5             | 15. 48. 37           | 16. 9, 5             | 2, 9  |
| 6                  | Su.               | 7. 14. 10. 41    | 14. 46. 50, 0             | 16. 6. 41            | 16. 6, 6             | 3, 6  |
| 7                  | M.                | 7. 15. 11. 2     | 14. 50. 51, 2             | 16. 24. 29           | 16. 2, 8             | 4, 5  |
| 8                  | Tu.               | 7. 16. 11. 25    | 14. 54. 52, 3             | 16. 42. 0            | 15. 58, 3            | 5, 4  |
| 9                  | W.                | 7. 17. 11. 49    | 14. 58. 54, 3             | 16. 59. 14           | 15. 52, 9            | 6, 1  |
| 10                 | Th.               | 7. 18. 12. 14    | 15. 2. 57, 0              | 17. 16. 11           | 15. 46, 8            | 7, 0  |
| 11                 | F.                | 7. 19. 12. 40    | 15. 7. 0, 6               | 17. 32. 49           | 15. 39, 8            | 7, 9  |
| 12                 | Sa.               | 7. 20. 13. 8     | 15. 11. 5, 0              | 17. 49. 10           | 15. 31, 9            | 8, 6  |
| 13                 | Su.               | 7. 21. 13. 37    | 15. 15. 10, 2             | 18. 5. 12            | 15. 23, 3            | 9, 5  |
| 14                 | M.                | 7. 22. 14. 8     | 15. 19. 16, 3             | 18. 20. 54           | 15. 13, 8            | 10, 3 |
| 15                 | Tu.               | 7. 23. 14. 40    | 15. 23. 23, 2             | 18. 36. 17           | 15. 3, 5             | 11, 2 |
| 16                 | W.                | 7. 24. 15. 13    | 15. 27. 30, 9             | 18. 51. 22           | 14. 52, 3            | 11, 9 |
| 17                 | Th.               | 7. 25. 15. 47    | 15. 31. 39, 3             | 19. 6. 4             | 14. 40, 4            | 12, 8 |
| 18                 | F.                | 7. 26. 16. 23    | 15. 35. 48, 8             | 19. 20. 26           | 14. 27, 6            | 13, 6 |
| 19                 | Sa.               | 7. 27. 17. 0     | 15. 39. 59, 0             | 19. 34. 28           | 14. 14, 0            | 14, 5 |
| 20                 | Su.               | 7. 28. 17. 39    | 15. 44. 10, 1             | 19. 48. 8            | 13. 59, 5            | 15, 2 |
| 21                 | M.                | 7. 29. 18. 20    | 15. 48. 21, 9             | 20. 1. 27            | 13. 44, 3            | 16, 1 |
| 22                 | Tu.               | 8. 0. 19. 2      | 15. 52. 34, 6             | 20. 14. 24           | 13. 28, 2            | 16, 8 |
| 23                 | W.                | 8. 1. 19. 45     | 15. 56. 48, 0             | 20. 26. 58           | 13. 11, 4            | 17, 6 |
| 24                 | Th.               | 8. 2. 20. 31     | 16. 1. 2, 3               | 20. 39. 10           | 12. 53, 8            | 18, 4 |
| 25                 | F.                | 8. 3. 21. 18     | 16. 5. 17, 3              | 20. 50. 59           | 12. 35, 4            | 19, 3 |
| 26                 | Sa.               | 8. 4. 22. 6      | 16. 9. 33, 1              | 21. 2. 24            | 12. 16, 1            | 19, 9 |
| 27                 | Su.               | 8. 5. 22. 56     | 16. 13. 49, 7             | 21. 13. 26           | 11. 56, 2            | 20, 7 |
| 28                 | M.                | 8. 6. 23. 48     | 16. 18. 7, 0              | 21. 24. 3            | 11. 35, 5            | 21, 4 |
| 29                 | Tu.               | 8. 7. 24. 42     | 16. 22. 25, 0             | 21. 34. 17           | 11. 14, 1            | 22, 1 |
| 30                 | W.                | 8. 8. 25. 36     | 16. 26. 43, 7             | 21. 44. 5            | 10. 52, 0            |       |

# NOVEMBER 1774. [123]

| Days | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|      | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1    | 16. 11, 1                        | 1. 6, 9                                            | 2. 30, 4                           | 9. 996245                              | 5. 9. 58                        |
| 7    | 16. 12, 6                        | 1. 7, 6                                            | 2. 30, 8                           | 9. 995607                              | 5. 9. 39                        |
| 13   | 16. 13, 9                        | 1. 8, 3                                            | 2. 31, 3                           | 9. 994996                              | 5. 9. 20                        |
| 19   | 16. 15, 1                        | 1. 9, 0                                            | 2. 31, 7                           | 9. 994449                              | 5. 9. 1                         |
| 25   | 16. 16, 2                        | 1. 9, 6                                            | 2. 32, 0                           | 9. 993986                              | 5. 8. 42                        |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite.<br>Immersion. |                         | II. Satellite.<br>Immersion. |                         | III. Satellite.<br>Emerfions. |            |
|-----------------------------|-------------------------|------------------------------|-------------------------|-------------------------------|------------|
| Days                        | H. M. S.                | Days                         | H. M. S.                | Days                          | H. M. S.   |
| 2                           | 17*55. 23<br>Emerfions. | 1                            | 1. 47. 44<br>Emerfions. | 3                             | 3. 17. 45  |
| 4                           | 14*31. 42               | 4                            | 17*24. 3                | 10                            | 7*18. 17   |
| 6                           | 9* 0. 13                | 8                            | 6*42. 52                | 17                            | 11*18. 10  |
| 8                           | 3. 28. 43               | 11                           | 20. 1. 34               | 24                            | 15*17. 32  |
| 9                           | 21. 57. 13              | 15                           | 9*20. 4                 | IV. Satellite. Conj.          |            |
| 11                          | 16*25. 41               | 18                           | 22. 38. 24              |                               |            |
| 13                          | 10*54. 4                | 22                           | 11*56. 35               |                               |            |
| 15                          | 5*22. 25                | 26                           | 1. 14. 39               |                               |            |
| 16                          | 23. 50. 44              | 29                           | 14*32. 32               |                               |            |
| 18                          | 18. 19. 2               |                              |                         |                               |            |
| 20                          | 12*47. 18               |                              |                         |                               |            |
| 22                          | 7*15. 29                |                              |                         |                               |            |
| 24                          | 1. 43. 41               |                              |                         |                               |            |
| 25                          | 20. 11. 51              |                              |                         |                               |            |
| 27                          | 14*40. 0                |                              |                         | 4                             | 6*24 Inf.  |
| 29                          | 9* 8. 6                 |                              |                         | 12                            | 16*17 Sup. |
|                             |                         |                              |                         | 21                            | 0. 34 Inf. |
|                             |                         |                              |                         | 29                            | 10*28 Sup. |



[124] NOVEMBER 1774.

| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric La-<br>titude. | Declina-<br>tion. | Pass.<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|-------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                   |

MERCURY. Greatest Elong. 14<sup>d</sup>.

|    |            |         |           |        |          |       |
|----|------------|---------|-----------|--------|----------|-------|
| 1  | 9. 11. 57  | 5. 49 S | 7. 27. 39 | 2. 5 S | 21. 41 S | 1. 12 |
| 7  | 10. 0. 24  | 6. 44   | 8. 5. 50  | 2. 28  | 23. 44   | 1. 23 |
| 13 | 10. 21. 13 | 6. 57   | 8. 13. 14 | 2. 37  | 25. 0    | 1. 31 |
| 19 | 11. 15. 30 | 6. 4    | 8. 19. 2  | 2. 22  | 25. 22   | 1. 31 |
| 25 | 0. 14. 48  | 3. 37   | 8. 21. 31 | 1. 30  | 24. 41   | 1. 17 |

V E N U S.

|    |           |         |           |         |         |        |
|----|-----------|---------|-----------|---------|---------|--------|
| 1  | 6. 0. 15  | 3. 16 N | 6. 22. 55 | 1. 27 N | 7. 34 S | 23. 1  |
| 7  | 6. 9. 56  | 3. 4    | 7. 0. 26  | 1. 21   | 10. 22  | 23. 5  |
| 13 | 6. 19. 37 | 2. 47   | 7. 7. 58  | 1. 13   | 13. 1   | 23. 10 |
| 19 | 6. 29. 16 | 2. 25   | 7. 15. 30 | 1. 3    | 15. 29  | 23. 14 |
| 25 | 7. 8. 53  | 1. 59   | 7. 23. 2  | 0. 51   | 17. 43  | 23. 19 |

M A R S. ☐ 23<sup>d</sup>. 6<sup>h</sup>.

|    |           |         |           |         |         |        |
|----|-----------|---------|-----------|---------|---------|--------|
| 1  | 3. 14. 6  | 1. 32 N | 4. 21. 8  | 1. 39 N | 16. 2 N | 19. 8  |
| 7  | 3. 16. 53 | 1. 35   | 4. 24. 8  | 1. 46   | 15. 10  | 18. 56 |
| 13 | 3. 19. 40 | 1. 38   | 4. 27. 0  | 1. 54   | 14. 18  | 18. 43 |
| 19 | 3. 22. 25 | 1. 40   | 4. 29. 45 | 2. 2    | 13. 28  | 18. 28 |
| 25 | 3. 25. 9  | 1. 42   | 5. 2. 21  | 2. 10   | 12. 40  | 18. 13 |

J U P I T E R. ♀ 2<sup>d</sup>. 21<sup>h</sup>.

|    |           |        |           |         |          |        |
|----|-----------|--------|-----------|---------|----------|--------|
| 1  | 1. 10. 52 | 1. 7 S | 1. 11. 17 | 1. 24 S | 13. 54 N | 12. 8  |
| 7  | 1. 11. 25 | 1. 7   | 1. 10. 28 | 1. 23   | 13. 40   | 11. 41 |
| 13 | 1. 11. 57 | 1. 6   | 1. 9. 40  | 1. 22   | 13. 26   | 11. 14 |
| 19 | 1. 12. 30 | 1. 6   | 1. 8. 55  | 1. 21   | 13. 12   | 10. 46 |
| 25 | 1. 13. 2  | 1. 5   | 1. 8. 13  | 1. 20   | 13. 0    | 10. 18 |

S A T U R N.

|    |          |         |          |         |         |        |
|----|----------|---------|----------|---------|---------|--------|
| 1  | 6. 0. 43 | 2. 20 N | 6. 4. 8  | 2. 10 N | 0. 21 N | 21. 48 |
| 7  | 6. 0. 55 | 2. 21   | 6. 4. 47 | 2. 11   | 0. 6 N  | 21. 27 |
| 13 | 6. 1. 7  | 2. 21   | 6. 5. 23 | 2. 12   | 0. 7 S  | 21. 5  |
| 19 | 6. 1. 19 | 2. 21   | 6. 5. 58 | 2. 13   | 0. 20   | 20. 42 |
| 25 | 6. 1. 31 | 2. 21   | 6. 6. 30 | 2. 14   | 0. 32   | 20. 19 |

# NOVEMBER 1774. [125]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D. M. S.                 |
| 1                  | Tu.               | 6. 5. 16. 33              | 6. 12. 2. 2                   | 2. 3. 10 N               | 2. 3. 17 N               |
| 2                  | W.                | 6. 18. 53. 47             | 6. 25. 51. 44                 | 3. 5. 34                 | 3. 33. 31                |
| 3                  | Th.               | 7. 2. 55. 24              | 7. 10. 4. 22                  | 3. 58. 32                | 4. 20. 9                 |
| 4                  | F.                | 7. 17. 17. 45             | 7. 24. 34. 48                 | 4. 37. 49                | 4. 51. 4                 |
| 5                  | Sa.               | 8. 1. 54. 33              | 8. 9. 16. 14                  | 4. 59. 39                | 5. 3. 17                 |
| 6                  | Su.               | 8. 16. 38. 9              | 8. 24. 0. 15                  | 5. 1. 54                 | 4. 55. 30                |
| 7                  | M.                | 9. 1. 20. 35              | 9. 8. 39. 13                  | 4. 44. 15                | 4. 23. 21                |
| 8                  | Tu.               | 9. 15. 55. 2              | 9. 23. 7. 42                  | 4. 8. 12                 | 5. 44. 14                |
| 9                  | W.                | 10. 0. 16. 43             | 10. 7. 21. 52                 | 3. 16. 53                | 2. 46. 47                |
| 10                 | Th.               | 10. 14. 23. 1             | 10. 21. 20. 11                | 2. 14. 22                | 1. 40. 15                |
| 11                 | F.                | 10. 28. 13. 17            | 11. 5. 2. 35                  | 1. 5. 2 N                | 0. 29. 10 N              |
| 12                 | Sa.               | 11. 11. 48. 4             | 11. 18. 30. 7                 | 0. 6. 46 S               | 0. 42. 15 S              |
| 13                 | Su.               | 11. 25. 8. 45             | 0. 1. 44. 14                  | 1. 16. 49                | 1. 50. 4                 |
| 14                 | M.                | 0. 8. 16. 40              | 0. 14. 46. 14                 | 2. 21. 32                | 2. 50. 54                |
| 15                 | Tu.               | 0. 21. 13. 2              | 0. 27. 37. 9                  | 3. 17. 49                | 3. 42. 0                 |
| 16                 | W.                | 1. 3. 58. 38              | 1. 10. 17. 36                 | 4. 3. 12                 | 4. 21. 14                |
| 17                 | Th.               | 1. 16. 33. 56             | 1. 22. 47. 45                 | 4. 35. 57                | 4. 47. 12                |
| 18                 | F.                | 1. 28. 59. 5              | 2. 5. 7. 57                   | 4. 55. 1                 | 4. 59. 17                |
| 19                 | Sa.               | 2. 11. 14. 21             | 2. 17. 18. 27                 | 5. 0. 0                  | 4. 57. 27                |
| 20                 | Su.               | 2. 23. 20. 23             | 2. 29. 20. 11                 | 4. 51. 29                | 4. 42. 19                |
| 21                 | M.                | 3. 5. 18. 18              | 3. 11. 14. 54                 | 4. 30. 4                 | 4. 14. 56                |
| 22                 | Tu.               | 3. 17. 10. 14             | 3. 23. 4. 56                  | 3. 57. 0                 | 3. 36. 37                |
| 23                 | W.                | 3. 28. 9. 14              | 4. 4. 53. 46                  | 3. 13. 52                | 2. 49. 0                 |
| 24                 | Th.               | 4. 10. 49. 8              | 4. 16. 45. 50                 | 2. 22. 11                | 1. 53. 46                |
| 25                 | F.                | 4. 22. 44. 37             | 4. 28. 46. 4                  | 1. 23. 52                | 0. 52. 49 S              |
| 26                 | Sa.               | 5. 4. 50. 52              | 5. 10. 59. 50                 | 0. 20. 52 S              | 0. 11. 40 N              |
| 27                 | Su.               | 5. 17. 13. 32             | 5. 23. 32. 35                 | 0. 44. 30 N              | 1. 17. 14                |
| 28                 | M.                | 5. 29. 57. 40             | 6. 6. 29. 19                  | 1. 49. 31                | 2. 20. 51                |
| 29                 | Tu.               | 6. 13. 7. 56              | 6. 19. 53. 50                 | 2. 50. 52                | 3. 18. 58                |
| 30                 | W.                | 6. 26. 47. 10             | 7. 3. 47. 56                  | 3. 44. 42                | 4. 7. 29                 |

[126] NOVEMBER 1774.

| Days of the Month. | Days of the Week. | D's Age. | D's Passage over Merid. | D's Right Ascen. at Noon. | D's Right Asc. at Midn. | D's Declination at Noon. | D's Declination at Midn. |
|--------------------|-------------------|----------|-------------------------|---------------------------|-------------------------|--------------------------|--------------------------|
|                    |                   |          | H. M.                   | D. M.                     | D. M.                   | D. M.                    | D. M.                    |
| 1                  | Tu.               | 28       | 22. 41                  | 185. 39                   | 192. 5                  | 0. 13 S                  | 2. 23 S                  |
| 2                  | W.                | 29       | 23. 32                  | 198. 37                   | 205. 17                 | 4. 33                    | 6. 41                    |
| 3                  | Th.               | 1        | 0                       | 212. 5                    | 219. 3                  | 8. 46                    | 10. 44                   |
| 4                  | F.                | 2        | 0. 27                   | 226. 10                   | 233. 26                 | 12. 34                   | 14. 14                   |
| 5                  | Sa.               | 3        | 1. 24                   | 240. 51                   | 248. 23                 | 15. 40                   | 16. 52                   |
| 6                  | Su.               | 4        | 2. 23                   | 256. 1                    | 263. 42                 | 17. 47                   | 18. 24                   |
| 7                  | M.                | 5        | 3. 23                   | 271. 25                   | 279. 7                  | 18. 43                   | 18. 43                   |
| 8                  | Tu.               | 6        | 4. 22                   | 286. 45                   | 294. 19                 | 18. 24                   | 17. 48                   |
| 9                  | W.                | 7        | 5. 20                   | 301. 45                   | 309. 2                  | 16. 54                   | 15. 45                   |
| 10                 | Th.               | 8        | 6. 15                   | 316. 11                   | 323. 10                 | 14. 23                   | 12. 49                   |
| 11                 | F.                | 9        | 7. 8                    | 330. 0                    | 336. 42                 | 11. 5                    | 9. 13                    |
| 12                 | Sa.               | 10       | 7. 58                   | 343. 16                   | 349. 42                 | 7. 15                    | 5. 12                    |
| 13                 | Su.               | 11       | 8. 46                   | 356. 3                    | 2. 19                   | 3. 6 S                   | 0. 59 S                  |
| 14                 | M.                | 12       | 9. 33                   | 8. 32                     | 14. 42                  | 1. 7 N                   | 3. 12 N                  |
| 15                 | Tu.               | 13       | 10. 19                  | 20. 51                    | 26. 59                  | 5. 14                    | 7. 11                    |
| 16                 | W.                | 14       | 11. 6                   | 33. 7                     | 39. 16                  | 9. 2                     | 10. 47                   |
| 17                 | Th.               | 15       | 11. 53                  | 45. 26                    | 51. 38                  | 12. 24                   | 13. 51                   |
| 18                 | F.                | 16       | 12. 40                  | 57. 52                    | 64. 8                   | 15. 9                    | 16. 16                   |
| 19                 | Sa.               | 17       | 13. 28                  | 70. 24                    | 76. 42                  | 17. 11                   | 17. 55                   |
| 20                 | Su.               | 18       | 14. 15                  | 83. 0                     | 89. 18                  | 18. 27                   | 18. 46                   |
| 21                 | M.                | 19       | 15. 3                   | 95. 35                    | 101. 51                 | 18. 52                   | 18. 45                   |
| 22                 | Tu.               | 20       | 15. 50                  | 108. 5                    | 114. 17                 | 18. 27                   | 17. 56                   |
| 23                 | W.                | 21       | 16. 36                  | 120. 26                   | 126. 32                 | 17. 13                   | 16. 20                   |
| 24                 | Th.               | 22       | 17. 21                  | 132. 36                   | 138. 38                 | 15. 15                   | 14. 1                    |
| 25                 | F.                | 23       | 18. 6                   | 144. 38                   | 150. 36                 | 12. 37                   | 11. 5                    |
| 26                 | Sa.               | 24       | 18. 51                  | 156. 34                   | 162. 32                 | 9. 25                    | 7. 38                    |
| 27                 | Su.               | 25       | 19. 37                  | 168. 32                   | 174. 35                 | 5. 44                    | 3. 45 N                  |
| 28                 | M.                | 26       | 20. 23                  | 180. 42                   | 186. 53                 | 1. 41 N                  | 0. 25 S                  |
| 29                 | Tu.               | 27       | 21. 13                  | 193. 11                   | 199. 57                 | 2. 34 S                  | 4. 43                    |
| 30                 | W.                | 28       | 22. 4                   | 206. 13                   | 212. 58                 | 6. 51                    | 8. 55                    |



# NOVEMBER 1774. [127]

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Mid-night. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Lo-ear at Noon. | Proport. Lo-ear at Midn. |
|--------------------|-------------------|--------------------|-------------------------|----------------------|--------------------------|--------------------------|--------------------------|
|                    |                   | M. S.              | M. S.                   | M. S.                | M. S.                    |                          |                          |
| 1                  | Tu.               | 15. 44             | 15. 50                  | 57. 45               | 58. 9                    | 4937                     | 4907                     |
| 2                  | W.                | 15. 57             | 16. 3                   | 58. 33               | 58. 55                   | 4877                     | 4850                     |
| 3                  | Th.               | 16. 9              | 16. 14                  | 59. 16               | 59. 34                   | 4824                     | 4802                     |
| 4                  | F.                | 16. 18             | 16. 22                  | 59. 50               | 60. 3                    | 4783                     | 4768                     |
| 5                  | Sa.               | 16. 24             | 16. 26                  | 60. 12               | 60. 18                   | 4757                     | 4750                     |
| 6                  | Su.               | 16. 26             | 16. 26                  | 60. 20               | 60. 20                   | 4747                     | 4747                     |
| 7                  | M.                | 16. 25             | 16. 23                  | 60. 16               | 60. 9                    | 4752                     | 4760                     |
| 8                  | Tu.               | 16. 21             | 16. 18                  | 60. 1                | 59. 50                   | 4770                     | 4783                     |
| 9                  | W.                | 16. 15             | 16. 11                  | 59. 37               | 59. 23                   | 4799                     | 4816                     |
| 10                 | Th.               | 16. 7              | 16. 3                   | 59. 8                | 58. 53                   | 4834                     | 4853                     |
| 11                 | F.                | 15. 58             | 15. 54                  | 58. 37               | 58. 20                   | 4872                     | 4893                     |
| 12                 | Sa.               | 15. 49             | 15. 45                  | 58. 4                | 57. 47                   | 4913                     | 4934                     |
| 13                 | Su.               | 15. 40             | 15. 36                  | 57. 31               | 57. 15                   | 4955                     | 4975                     |
| 14                 | M.                | 15. 32             | 15. 28                  | 56. 59               | 56. 44                   | 4995                     | 5014                     |
| 15                 | Tu.               | 15. 23             | 15. 19                  | 56. 28               | 56. 14                   | 5035                     | 5053                     |
| 16                 | W.                | 15. 15             | 15. 12                  | 55. 59               | 55. 45                   | 5072                     | 5090                     |
| 17                 | Th.               | 15. 8              | 15. 4                   | 55. 32               | 55. 19                   | 5107                     | 5124                     |
| 18                 | F.                | 15. 1              | 14. 58                  | 55. 7                | 54. 56                   | 5140                     | 5154                     |
| 19                 | Sa.               | 14. 55             | 14. 53                  | 54. 46               | 54. 37                   | 5167                     | 5179                     |
| 20                 | Su.               | 14. 51             | 14. 49                  | 54. 29               | 54. 23                   | 5190                     | 5198                     |
| 21                 | M.                | 14. 48             | 14. 47                  | 54. 18               | 54. 15                   | 5205                     | 5209                     |
| 22                 | Tu.               | 14. 46             | 14. 47                  | 54. 13               | 54. 14                   | 5211                     | 5210                     |
| 23                 | W.                | 14. 48             | 14. 49                  | 54. 17               | 54. 22                   | 5206                     | 5199                     |
| 24                 | Th.               | 14. 51             | 14. 54                  | 54. 29               | 54. 39                   | 5190                     | 5177                     |
| 25                 | F.                | 14. 57             | 15. 1                   | 54. 51               | 55. 6                    | 5161                     | 5141                     |
| 26                 | Sa.               | 15. 5              | 15. 11                  | 55. 23               | 55. 43                   | 5119                     | 5093                     |
| 27                 | Su.               | 15. 16             | 15. 23                  | 56. 4                | 56. 28                   | 5065                     | 5035                     |
| 28                 | M.                | 15. 30             | 15. 37                  | 56. 53               | 57. 20                   | 5003                     | 4968                     |
| 29                 | Tu.               | 15. 45             | 15. 53                  | 57. 48               | 58. 16                   | 4933                     | 4898                     |
| 30                 | W.                | 16. 0              | 16. 8                   | 58. 44               | 59. 11                   | 4864                     | 4831                     |

[128] NOVEMBER 1774.

Distances of  $\mathcal{D}$ 's Center from Stars, and from  $\odot$  east of her.

| Days. | Stars Names.        | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.   |
|-------|---------------------|-------------|-------------|-------------|------------|
|       |                     | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.   |
| 5     | $\beta$ Capricorni. | 58. 45. 53  | 56. 56. 5   | 55. 6. 13   | 53. 15. 17 |
| 6     |                     | 44. 6. 5    | 42. 16. 2   | 40. 26. 1   | 38. 36. 3  |
| 7     |                     | 29. 27. 25  |             |             |            |
| 7     | $\alpha$ Pegasi.    | 8. 4. 28    | 76. 21. 59  | 74. 39. 43  | 72. 57. 42 |
| 8     |                     | 64. 32. 17  | 62. 52. 15  | 61. 12. 41  | 59. 33. 36 |
| 9     |                     | 51. 26. 20  | 49. 50. 49  | 48. 16. 5   | 46. 42. 10 |
| 10    |                     | 39. 7. 42   | 37. 40. 29  | 36. 14. 47  | 34. 50. 46 |
| 11    | $\alpha$ Arietis.   | 66. 28. 34  | 64. 49. 13  | 63. 10. 13  | 61. 31. 35 |
| 12    |                     | 53. 23. 48  | 51. 47. 25  | 50. 11. 28  | 48. 35. 57 |
| 13    |                     | 40. 46. 14  |             |             |            |
| 13    | Aldebaran.          | 71. 27. 56  | 69. 48. 26  | 68. 9. 8    | 66. 30. 4  |
| 14    |                     | 58. 17. 48  | 56. 39. 57  | 55. 2. 17   | 53. 24. 49 |
| 15    |                     | 45. 20. 23  | 43. 44. 4   | 42. 7. 56   | 40. 32. 0  |
| 16    |                     | 32. 35. 5   | 31. 0. 14   | 29. 25. 34  | 27. 51. 4  |
| 17    |                     | 20. 1. 23   | 18. 27. 59  | 16. 54. 45  | 15. 21. 42 |
| 18    | Pollux.             | 52. 20. 6   | 50. 50. 29  | 49. 21. 9   | 47. 52. 5  |
| 19    |                     | 40. 31. 16  | 39. 4. 7    | 37. 37. 22  | 36. 11. 0  |
| 20    | Regulus.            | 63. 30. 29  | 62. 0. 42   | 60. 31. 1   | 59. 1. 27  |
| 21    |                     | 51. 35. 1   | 50. 5. 59   | 48. 37. 2   | 47. 8. 10  |
| 22    |                     | 39. 44. 45  | 38. 16. 10  | 36. 47. 37  | 35. 19. 5  |
| 23    |                     | 27. 56. 40  | 26. 28. 9   | 24. 59. 37  | 23. 31. 3  |
| 24    |                     | 16. 7. 36   |             |             |            |
| 24    | Spica $\kappa$      | 69. 49. 9   | 68. 20. 23  | 66. 51. 31  | 65. 22. 32 |
| 25    |                     | 57. 55. 39  | 56. 25. 50  | 54. 55. 51  | 53. 25. 44 |
| 26    |                     | 45. 52. 3   |             |             |            |
| 23    | The Sun.            |             | 120. 56. 28 | 119. 35. 48 | 118. 15. 4 |
| 24    |                     | 111. 30. 13 | 110. 8. 58  | 108. 47. 37 | 107. 26. 8 |
| 25    |                     | 100. 36. 29 | 99. 14. 3   | 97. 51. 26  | 96. 28. 37 |
| 26    |                     | 89. 31. 14  | 88. 7. 0    | 86. 42. 30  | 85. 17. 44 |
| 27    |                     | 78. 9. 28   | 76. 42. 53  | 75. 15. 57  | 73. 48. 41 |
| 28    |                     | 66. 26. 54  | 64. 57. 25  | 63. 27. 32  | 61. 57. 15 |
| 29    |                     | 54. 19. 49  | 52. 47. 6   | 51. 13. 58  | 49. 40. 27 |
| 30    |                     | 41. 46. 41  | 40. 10. 45  | 38. 34. 27  |            |

# NOVEMBER 1774. [129]

Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  east of her.

| Days.                                  | Stars Names.             | 12 Hours.                                                                                    | 15 Hours.                                                                                      | 18 Hours.                                                                                      | 21 Hours.                                                                                      |
|----------------------------------------|--------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
|                                        |                          | D. M. S.                                                                                     | D. M. S.                                                                                       | D. M. S.                                                                                       | D. M. S.                                                                                       |
| 5<br>6                                 | $\beta$ Capri-<br>corni. | 51. 26. 17<br>36. 46. 8                                                                      | 49. 36. 15<br>34. 56. 18                                                                       | 47. 46. 12<br>33. 6. 33                                                                        | 45. 56. 8<br>31. 16. 56                                                                        |
| 7<br>8<br>9<br>10                      | $\alpha$ Pegasi.         | 71. 15. 58<br>57. 54. 59<br>45. 9. 9<br>33. 28. 34                                           | 69. 34. 31<br>56. 16. 55<br>43. 37. 6                                                          | 67. 53. 25<br>54. 39. 26<br>42. 6. 7                                                           | 66. 12. 41<br>53. 2. 33<br>40. 36. 17                                                          |
| 10<br>11<br>12                         | $\alpha$ Arietis.        | 73. 8. 56<br>59. 53. 14<br>47. 0. 54                                                         | 71. 28. 25<br>58. 15. 18<br>45. 26. 21                                                         | 69. 48. 10<br>56. 37. 44<br>43. 52. 22                                                         | 68. 8. 13<br>55. 0. 34<br>42. 18. 59                                                           |
| 13<br>14<br>15<br>16<br>17             | Aldeba-<br>ran.          | 64. 51. 12<br>51. 47. 33<br>38. 56. 15<br>26. 16. 46<br>13. 48. 49                           | 63. 12. 33<br>50. 10. 28<br>37. 20. 41<br>24. 42. 39                                           | 61. 34. 6<br>48. 33. 35<br>35. 45. 18<br>23. 8. 43                                             | 59. 55. 51<br>46. 56. 53<br>34. 10. 6<br>21. 34. 58                                            |
| 17<br>18<br>19                         | Pollux.                  | 58. 21. 0<br>46. 23. 18<br>34. 45. 2                                                         | 56. 50. 25<br>44. 54. 48                                                                       | 55. 20. 5<br>43. 26. 37                                                                        | 53. 49. 58<br>41. 58. 47                                                                       |
| 19<br>20<br>21<br>22<br>23             | Regulus.                 | 69. 30. 59<br>57. 32. 0<br>45. 39. 22<br>33. 50. 35<br>22. 2. 27                             | 68. 0. 39<br>56. 2. 37<br>44. 10. 39<br>32. 22. 6<br>20. 33. 49                                | 66. 30. 27<br>54. 33. 20<br>42. 41. 58<br>30. 53. 38<br>19. 5. 7                               | 65. 0. 24<br>53. 4. 8<br>41. 13. 20<br>29. 25. 9<br>17. 36. 23                                 |
| 24<br>25                               | Spica $\alpha$           | 63. 53. 26<br>51. 55. 21                                                                     | 62. 24. 12<br>50. 24. 49                                                                       | 60. 54. 50<br>48. 54. 6                                                                        | 59. 25. 18<br>47. 23. 11                                                                       |
| 23<br>24<br>25<br>26<br>27<br>28<br>29 | The Sun.                 | 116. 54. 16<br>106. 4. 32<br>95. 5. 36<br>83. 52. 41<br>72. 21. 4<br>60. 26. 35<br>48. 6. 30 | 115. 33. 23<br>104. 42. 46<br>93. 42. 22<br>82. 27. 20<br>70. 53. 5<br>58. 55. 30<br>46. 32. 8 | 114. 12. 25<br>103. 20. 50<br>92. 18. 54<br>81. 1. 41<br>69. 24. 44<br>57. 24. 1<br>44. 57. 23 | 112. 51. 22<br>101. 58. 44<br>90. 55. 11<br>79. 35. 44<br>67. 56. 0<br>55. 52. 7<br>43. 22. 14 |



[130] NOVEMBER 1774.

Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  west of her.

| Days. | Stars Names.             | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|--------------------------|-------------|-------------|-------------|-------------|
|       |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | Regulus.                 | 38. 35. 58  | 40. 16. 53  | 41. 53. 12  | 43. 39. 53  |
| 2     |                          | 32. 13. 50  | 53. 57. 55  | 55. 42. 12  | 57. 26. 52  |
| 7     | The Sun.                 | 46. 20. 49  | 48. 2. 14   | 49. 43. 33  | 51. 24. 47  |
| 8     |                          | 59. 48. 51  | 61. 29. 13  | 63. 9. 24   | 64. 49. 25  |
| 9     |                          | 73. 6. 37   | 74. 45. 26  | 76. 24. 2   | 78. 2. 25   |
| 10    |                          | 86. 10. 57  | 87. 47. 59  | 89. 24. 47  | 91. 1. 20   |
| 11    |                          | 99. 0. 31   | 100. 35. 39 | 102. 10. 34 | 103. 45. 14 |
| 12    |                          | 111. 54. 56 | 113. 8. 12  | 114. 41. 14 | 116. 14. 2  |
| 10    | $\beta$ Capri-<br>corni. | 13. 39. 58  | 15. 24. 25  | 17. 8. 47   | 18. 52. 55  |
| 11    |                          | 27. 30. 36  | 29. 13. 32  | 30. 56. 14  | 32. 38. 44  |
| 12    |                          | 41. 7. 44   | 42. 48. 53  | 44. 29. 49  | 46. 10. 33  |
| 13    | $\alpha$ Aquilæ.         | 61. 59. 41  | 63. 26. 22  | 64. 53. 13  | 66. 20. 11  |
| 14    |                          | 73. 36. 2   | 75. 3. 16   | 76. 30. 27  | 77. 57. 36  |
| 15    | Fomal-<br>haut.          | 52. 12. 36  | 53. 37. 47  | 55. 3. 13   | 56. 28. 52  |
| 16    |                          | 63. 39. 25  | 65. 5. 49   | 66. 32. 16  | 67. 58. 44  |
| 17    | $\alpha$ Pegasi.         | 60. 15. 14  | 61. 41. 3   | 63. 6. 54   | 64. 32. 48  |
| 18    |                          | 71. 42. 22  | 73. 8. 12   | 74. 33. 59  | 75. 59. 42  |
| 19    | $\alpha$ Arietis.        | 39. 31. 8   | 40. 55. 22  | 42. 19. 51  | 43. 44. 33  |
| 20    |                          | 50. 50. 14  | 52. 15. 38  | 53. 41. 6   | 55. 6. 37   |
| 21    |                          | 62. 14. 47  |             |             |             |
| 21    | Aldeba-<br>ran.          | 28. 33. 44  | 30. 2. 48   | 31. 31. 48  | 33. 0. 43   |
| 22    |                          | 40. 24. 27  | 41. 53. 5   | 43. 21. 42  | 44. 50. 19  |
| 23    |                          | 52. 13. 17  | 53. 41. 56  | 55. 10. 37  | 56. 39. 22  |
| 24    |                          | 64. 4. 10   | 65. 33. 24  | 67. 2. 43   | 68. 32. 10  |
| 25    | Pollux.                  | 33. 32. 54  | 34. 58. 28  | 36. 24. 34  | 37. 51. 8   |
| 26    |                          | 45. 10. 44  | 46. 39. 56  | 48. 9. 32   | 49. 39. 33  |
| 27    |                          | 57. 15. 36  |             |             |             |
| 27    | Regulus.                 | 20. 31. 27  | 22. 5. 46   | 23. 40. 28  | 25. 15. 33  |
| 28    |                          | 33. 16. 47  | 34. 54. 13  | 36. 32. 5   | 38. 10. 21  |
| 29    |                          | 46. 28. 5   | 48. 8. 56   | 49. 50. 13  | 51. 31. 57  |
| 30    |                          | 60. 7. 17   | 61. 51. 41  | 63. 36. 31  | 65. 21. 48  |
| D.1   |                          | 74. 14. 33  |             |             |             |

# NOVEMBER 1774 [131]

Distances of  $\gamma$ 's Center from Stars, and from  $\odot$  west of her.

| Days. | Stars Names.             | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.  |
|-------|--------------------------|-------------|-------------|-------------|------------|
|       |                          | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.   |
| 1     | Regulus.                 | 45. 21. 58  | 47. 4. 25   | 48. 47. 14  | 50. 30. 25 |
| 2     |                          | 59. 11. 53  |             |             |            |
| 6     | The Sun.                 | 39. 34. 38  | 41. 16. 14  | 42. 57. 45  | 44. 39. 20 |
| 7     |                          | 53. 5. 54   | 54. 46. 51  | 56. 27. 40  | 58. 8. 20  |
| 8     |                          | 66. 29. 16  | 68. 8. 54   | 69. 48. 21  | 71. 27. 35 |
| 9     |                          | 79. 40. 35  | 81. 18. 31  | 82. 56. 13  | 84. 33. 42 |
| 10    |                          | 92. 37. 40  | 94. 13. 44  | 95. 49. 34  | 97. 25. 10 |
| 11    |                          | 105. 19. 40 | 106. 53. 50 | 108. 27. 46 | 110. 1. 28 |
| 12    |                          | 117. 46. 37 | 119. 18. 57 | 120. 51. 4  |            |
| 10    | $\beta$ Capri-<br>corni. | 20. 36. 51  | 22. 20. 35  | 24. 4. 8    | 25. 47. 28 |
| 11    |                          | 34. 21. 0   | 36. 3. 1    | 37. 44. 48  | 39. 26. 23 |
| 12    |                          | 47. 51. 6   |             |             |            |
| 12    | $\alpha$ Aquilæ.         | 56. 15. 17  | 57. 40. 59  | 59. 6. 58   | 60. 33. 13 |
| 13    |                          | 67. 47. 15  | 69. 14. 23  | 70. 41. 34  | 72. 8. 47  |
| 14    |                          | 79. 24. 43  |             |             |            |
| 14    | Fomal-<br>haut.          | 46. 35. 24  | 47. 59. 5   | 49. 23. 12  | 50. 47. 43 |
| 15    |                          | 57. 54. 43  | 59. 20. 43  | 60. 46. 50  | 62. 13. 4  |
| 16    |                          | 69. 25. 12  |             |             |            |
| 16    | $\alpha$ Pegasi.         | 54. 32. 54  | 55. 58. 18  | 57. 23. 49  | 58. 49. 28 |
| 17    |                          | 65. 58. 44  | 67. 24. 40  | 68. 50. 35  | 70. 16. 29 |
| 18    |                          | 77. 25. 20  |             |             |            |
| 18    | $\alpha$ Arietis.        | 33. 57. 42  | 35. 20. 26  | 36. 43. 37  | 38. 7. 12  |
| 19    |                          | 45. 9. 26   | 46. 34. 28  | 47. 59. 37  | 49. 24. 53 |
| 20    |                          | 56. 32. 11  | 57. 57. 48  | 59. 23. 26  | 60. 49. 6  |
| 21    | Aldeba-<br>ran.          | 34. 29. 34  | 35. 58. 21  | 37. 27. 5   | 38. 55. 48 |
| 22    |                          | 46. 18. 54  | 47. 47. 29  | 49. 16. 4   | 50. 44. 40 |
| 23    |                          | 58. 8. 10   | 59. 37. 3   | 61. 6. 0    | 62. 35. 2  |
| 24    |                          | 70. 1. 44   |             |             |            |
| 24    | Pollux.                  | 27. 56. 36  | 29. 19. 41  | 30. 43. 27  | 32. 7. 52  |
| 25    |                          | 39. 18. 11  | 40. 45. 40  | 42. 13. 30  | 43. 41. 57 |
| 26    |                          | 51. 9. 59   | 52. 40. 48  | 54. 12. 1   | 55. 43. 37 |
| 27    | Regulus.                 | 26. 51. 1   | 28. 26. 52  | 30. 3. 6    | 31. 39. 45 |
| 28    |                          | 39. 49. 2   | 41. 28. 9   | 43. 7. 42   | 44. 47. 40 |
| 29    |                          | 53. 14. 8   | 54. 56. 45  | 56. 39. 49  | 58. 23. 20 |
| 30    |                          | 67. 7. 30   | 68. 53. 38  | 70. 40. 11  | 72. 27. 19 |

[132] NOVEMBER 1774.

Configurations of the SATELLITES of JUPITER  
at 7 o' th' Clock in the Evening.

|    |       |          |       |       |       |          |
|----|-------|----------|-------|-------|-------|----------|
| 1  |       |          | 1. 2. | ⊙     |       | .1       |
| 2  |       | .4       | .2    | ⊙     | .1    | 3.       |
| 3  |       |          | .4    | 1. 3. | ⊙     | .2       |
| 4  | 4.0   |          | 3.    | ⊙     | 1 6 2 |          |
| 5  |       | .3       | 2.    | .1    | ⊙     | .4       |
| 6  | 1●    |          | .3    | .2    | ⊙     | .4       |
| 7  |       |          |       | ⊙     | .1    | .1 .2 .4 |
| 8  |       |          | 1. 2. | ⊙     |       | .1 .4    |
| 9  |       | .2       |       | ⊙     | .1    | 3. 4.    |
| 10 | 3●    |          | 1.    | ⊙     | .2    | 4.       |
| 11 |       | 3.       |       | ⊙     | 1. 2. | 4.       |
| 12 |       | .3       | 2.    | .1    | ⊙     | 4.       |
| 13 |       |          | 4.    | .3 .2 | ⊙     | 1.       |
| 14 | 1.0   | 4.       |       | ⊙     | .3 .2 |          |
| 15 | 4.    |          |       | 1.    | ⊙     | .3 2●    |
| 16 | 4.    |          | .2    | ⊙     | .1    | 3.       |
| 17 | .4    |          | 1.    | ⊙     | 3.    | .2       |
| 18 |       | .4       | 3.    | ⊙     | 1. 2. |          |
| 19 |       | 3 6 4    | 2.    | .1    | ⊙     |          |
| 20 |       | .3 2 6 4 |       | ⊙     | 1.    |          |
| 21 |       |          |       | .1    | ⊙     | 3 6 4 .2 |
| 22 | 1●    |          |       | ⊙     | 2.    | .3.4     |
| 23 |       | 2.       |       | ⊙     | .1    | 3. .4    |
| 24 |       |          | 1.    | ⊙     | 3.    | .2 .4    |
| 25 |       | 3.       |       | ⊙     | 2.    | .1 4.    |
| 26 |       | 3.       | 2 6 1 | ⊙     |       | 4.       |
| 27 |       | .3       | .2    | ⊙     | 1.    | 4.       |
| 28 |       |          |       | .1    | ⊙     | .3 4. .2 |
| 29 | 1● 4● |          |       | ⊙     | 2.    | .3       |
| 30 |       | 4 6 2    |       | ⊙     | .1    | 3.       |



# DECEMBER 1774. [133]

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. | Phases of the Moon.                                                             |              |
|--------------------|-------------------|------------------------|---------------------------------------------------------------------------------|--------------|
|                    |                   |                        | D. H. M.                                                                        |              |
|                    |                   |                        | New Moon                                                                        | — 3. 1. 44   |
|                    |                   |                        | First Quarter                                                                   | — 9. 17. 5   |
|                    |                   |                        | Full Moon                                                                       | — 17. 12. 16 |
|                    |                   |                        | Last Quarter                                                                    | — 25. 16. 43 |
|                    |                   |                        | Other Phenomena.                                                                |              |
|                    |                   |                        | D.                                                                              |              |
|                    |                   |                        | 1. $\hbar \gamma \text{ } \text{diff. Lat. } 33'$                               |              |
|                    |                   |                        | $\text{C } \gamma \text{ } \hat{=} 18^{\text{h}}. 14'$                          |              |
|                    |                   |                        | $\text{C } \eta \text{ } \hat{=} 21^{\text{h}}. 53'$                            |              |
|                    |                   |                        | 7. $\delta \text{ } \text{ } \text{ } \text{diff. Lat. } 1^{\circ}. 55'$        |              |
|                    |                   |                        | 8. $\lambda \text{ } \hat{=} 23^{\text{h}}. 41'$                                |              |
|                    |                   |                        | 9. $\text{C } \phi \text{ } \hat{=} \text{Im. } 10^{\text{h}}. 28'$             |              |
|                    |                   |                        | * $5 \frac{1}{2}' \text{ N. of D's cent.}$                                      |              |
|                    |                   |                        | Em. $11^{\text{h}}. 23'$ . * $6 \frac{1}{2}' \text{ N.}$                        |              |
|                    |                   |                        | 15. $\text{ } \text{ } \text{Stationary.}$                                      |              |
|                    |                   |                        | $\text{C } \gamma \text{ } \text{ } \text{Im. } 14^{\text{h}}. 29 \frac{1}{2}'$ |              |
|                    |                   |                        | * $14 \frac{1}{2}' \text{ S. of D's cent.}$                                     |              |
|                    |                   |                        | Em. $14^{\text{h}}. 46 \frac{1}{2}'$ . *                                        |              |
|                    |                   |                        | $14 \frac{1}{2}' \text{ S.}$                                                    |              |
|                    |                   |                        | $\text{C } 2 \text{ ad } \delta \text{ } \text{ } 16^{\text{h}}. 1'$            |              |
|                    |                   |                        | $\text{ } \text{ } \text{Ophi. diff. Lat. } 59'$                                |              |
|                    |                   |                        | $\text{C } \alpha \text{ } \text{ } 21^{\text{h}}. 17'$                         |              |
|                    |                   |                        | 21. $\text{ } \text{ } \text{enters } \text{ } \text{at } 4^{\text{h}}. 50'$    |              |
|                    |                   |                        | 23. $\text{C } \rho \text{ } \text{ } 3^{\text{h}}. 42'$                        |              |
|                    |                   |                        | $\text{C } \chi \text{ } \text{ } 19^{\text{h}}. 52'$                           |              |
|                    |                   |                        | 24. $\text{C } \sigma \text{ } \text{ } 4^{\text{h}}. 5'$                       |              |
|                    |                   |                        | $\text{C } \beta \text{ } \text{ } 20^{\text{h}}. 27'$                          |              |
|                    |                   |                        | 25. $\text{C } \eta \text{ } \text{ } 11^{\text{h}}. 14'$                       |              |
|                    |                   |                        | $\text{C } \gamma \text{ } \text{ } 21^{\text{h}}. 19'$                         |              |
|                    |                   |                        | 26. $\text{C } \text{ } \text{ } 0^{\text{h}}. 1'$                              |              |
|                    |                   |                        | 27. $\text{C } \kappa \text{ } \text{ } 17^{\text{h}}. 30'$                     |              |
|                    |                   |                        | 29. $\text{C } \gamma \text{ } \hat{=} 4^{\text{h}}. 51'$                       |              |
|                    |                   |                        | $\text{C } \eta \text{ } \hat{=} 8^{\text{h}}. 35'$                             |              |
|                    |                   |                        | $\text{C } \downarrow \text{ } \hat{=} 13^{\text{h}}. 36'$                      |              |
| 1                  | Th.               |                        |                                                                                 |              |
| 2                  | F.                |                        |                                                                                 |              |
| 3                  | Sa.               |                        |                                                                                 |              |
| 4                  | Su.               | 2d Sunday in Advent.   |                                                                                 |              |
| 5                  | M.                |                        |                                                                                 |              |
| 6                  | Tu.               | Nicholas.              |                                                                                 |              |
| 7                  | W.                |                        |                                                                                 |              |
| 8                  | Th.               | Concept. of V. Mary.   |                                                                                 |              |
| 9                  | F.                |                        |                                                                                 |              |
| 10                 | Sa.               |                        |                                                                                 |              |
| 11                 | Su.               | 3d Sunday in Advent.   |                                                                                 |              |
| 12                 | M.                |                        |                                                                                 |              |
| 13                 | Tu.               | Lucy.                  |                                                                                 |              |
| 14                 | W.                |                        |                                                                                 |              |
| 15                 | Th.               | [ends.                 |                                                                                 |              |
| 16                 | F.                | O Sapientia. Camb. T.  |                                                                                 |              |
| 17                 | Sa.               | Oxf. Term ends.        |                                                                                 |              |
| 18                 | Su.               | 4th Sunday in Advent.  |                                                                                 |              |
| 19                 | M.                |                        |                                                                                 |              |
| 20                 | Tu.               |                        |                                                                                 |              |
| 21                 | W.                | St. Thomas.            |                                                                                 |              |
| 22                 | Th.               |                        |                                                                                 |              |
| 23                 | F.                |                        |                                                                                 |              |
| 24                 | Sa.               |                        |                                                                                 |              |
| 25                 | Su.               | Christmas-Day.         |                                                                                 |              |
| 26                 | M.                | St. Stephen.           |                                                                                 |              |
| 27                 | Tu.               | St. John.              |                                                                                 |              |
| 28                 | W.                | Innocents.             |                                                                                 |              |
| 29                 | Th.               |                        |                                                                                 |              |
| 30                 | F.                |                        |                                                                                 |              |
| 31                 | Sa.               | Silvester.             |                                                                                 |              |

[134]      D E C E M B E R      1774.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Sub. | Diff. |
|--------------------|-------------------|------------------|---------------------------|----------------------|----------------------|-------|
|                    |                   | S. D. M. S.      | H. M. S.                  | D. M. S.             | M. S.                | S.    |
| 1                  | Th.               | 8. 9. 26. 32     | 16. 31. 3, 1              | 21. 53. 29           | 10. 29, 1            | 23, 4 |
| 2                  | F.                | 8. 10. 27. 30    | 16. 35. 23, 2             | 22. 2. 27            | 10, 5, 7             | 24, 0 |
| 3                  | Sa.               | 8. 11. 28. 28    | 16. 39. 43, 8             | 22. 11. 0            | 9, 41, 7             | 24, 6 |
| 4                  | Su.               | 8. 12. 29. 27    | 16. 44. 5, 1              | 22. 19. 7            | 9, 17, 1             | 25, 2 |
| 5                  | M.                | 8. 13. 30. 28    | 16. 48. 26, 9             | 22. 26. 48           | 8. 51, 9             | 25, 7 |
| 6                  | Tu.               | 8. 14. 31. 29    | 16. 52. 49, 2             | 22. 34. 3            | 8. 26, 2             | 26, 2 |
| 7                  | W.                | 8. 15. 32. 30    | 16. 57. 12, 0             | 22. 40. 50           | 8. 0, 0              | 26, 6 |
| 8                  | Th.               | 8. 16. 33. 33    | 17. 1. 35, 3              | 22. 47. 12           | 7. 33, 4             | 27, 1 |
| 9                  | F.                | 8. 17. 34. 36    | 17. 5. 59, 1              | 22. 53. 6            | 7. 6, 3              | 27, 5 |
| 10                 | Sa.               | 8. 18. 35. 39    | 17. 10. 23, 1             | 22. 58. 33           | 6. 38, 8             | 27, 9 |
| 11                 | Su.               | 8. 19. 36. 43    | 17. 14. 47, 7             | 23. 3. 33            | 6. 10, 9             | 28, 2 |
| 12                 | M.                | 8. 20. 37. 47    | 17. 19. 12, 5             | 23. 8. 5             | 5. 42, 7             | 28, 6 |
| 13                 | Tu.               | 8. 21. 38. 51    | 17. 23. 37, 6             | 23. 12. 9            | 5. 14, 1             | 28, 8 |
| 14                 | W.                | 8. 22. 39. 56    | 17. 28. 3, 0              | 23. 15. 46           | 4. 45, 3             | 29, 0 |
| 15                 | Th.               | 8. 23. 41. 1     | 17. 32. 28, 7             | 23. 18. 55           | 4. 16, 3             | 29, 2 |
| 16                 | F.                | 8. 24. 42. 7     | 17. 36. 54, 6             | 23. 21. 35           | 3. 47, 1             | 29, 4 |
| 17                 | Sa.               | 8. 25. 43. 13    | 17. 41. 20, 7             | 23. 23. 48           | 3. 17, 7             | 29, 6 |
| 18                 | Su.               | 8. 26. 44. 19    | 17. 45. 46, 9             | 23. 25. 33           | 2. 48, 1             | 29, 7 |
| 19                 | M.                | 8. 27. 45. 26    | 17. 50. 13, 3             | 23. 26. 49           | 2. 18, 4             | 29, 9 |
| 20                 | Tu.               | 8. 28. 46. 33    | 17. 54. 39, 8             | 23. 27. 38           | 1. 48, 5             | 30, 0 |
| 21                 | W.                | 8. 29. 47. 42    | 17. 59. 6, 4              | 23. 27. 57           | 1. 18, 5             | 30, 0 |
| 22                 | Th.               | 9. 0. 48. 51     | 18. 3. 33, 0              | 23. 27. 49           | 0. 48, 5             | 30, 0 |
| 23                 | F.                | 9. 1. 50. 0      | 18. 7. 59, 7              | 23. 27. 12           | 0. 18, 5             | 30, 0 |
| 24                 | Sa.               | 9. 2. 51. 10     | 18. 12. 26, 3             | 23. 26. 7            | Ad: 11, 5            | 30, 0 |
| 25                 | Su.               | 9. 3. 52. 20     | 18. 16. 52, 9             | 23. 24. 34           | 0. 41, 4             | 29, 9 |
| 26                 | M.                | 9. 4. 53. 31     | 18. 21. 19, 4             | 23. 22. 32           | 1. 11, 3             | 29, 8 |
| 27                 | Tu.               | 9. 5. 54. 43     | 18. 25. 45, 7             | 23. 20. 2            | 1. 41, 1             | 29, 6 |
| 28                 | W.                | 9. 6. 55. 54     | 18. 30. 11, 9             | 23. 17. 4            | 2, 10, 7             | 29, 3 |
| 29                 | Th.               | 9. 7. 57. 7      | 18. 34. 38, 0             | 23. 13. 38           | 2, 40, 0             | 29, 2 |
| 30                 | F.                | 9. 8. 58. 19     | 18. 39. 3, 8              | 23. 9. 44            | 3, 9, 2              | 29, 0 |
| 31                 | Sa.               | 9. 9. 59. 32     | 18. 43. 29, 4             | 23. 5. 22            | 3. 38, 2             |       |

# DECEMBER 1774. [135]

| Days. | Semidia-<br>meter of<br>the Sun. | Time of D <sup>o</sup><br>passing the<br>Meridian. | Hourly<br>Motion<br>of the<br>Sun. | Logarithm<br>of the Sun's<br>Distance. | Place of<br>the Moon's<br>Node. |
|-------|----------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------|---------------------------------|
|       | M. S.                            | M. S.                                              | M. S.                              |                                        | S. D. M.                        |
| 1     | 16. 17, 1                        | 1. 10, 2                                           | 2. 32, 2                           | 9. 993592                              | 5. 8. 22                        |
| 7     | 16. 17, 9                        | 1. 10, 7                                           | 2. 32, 5                           | 9. 993248                              | 5. 8. 3                         |
| 13    | 16. 18, 5                        | 1. 11, 0                                           | 2. 32, 7                           | 9. 992959                              | 5. 7. 44                        |
| 19    | 16. 19, 0                        | 1. 11, 1                                           | 2. 32, 8                           | 9. 992765                              | 5. 7. 25                        |
| 25    | 16. 19, 2                        | 1. 11, 1                                           | 2. 32, 9                           | 9. 992671                              | 5. 7. 6                         |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite.<br>Emerfions. |            | II. Satellite.<br>Emerfions. |            | III. Satellite.      |              |
|-----------------------------|------------|------------------------------|------------|----------------------|--------------|
| Days                        | H. M. S.   | Days                         | H. M. S.   | Days                 | H. M. S.     |
| 1                           | 3. 36. 13  | 3                            | 3. 50. 17  | 1                    | 19. 16. 21 E |
| 2                           | 22. 4. 16  | 6                            | 17. 7. 56  | 8                    | 23. 14. 53 E |
| 4                           | 16. 32. 19 | 10                           | 6* 25. 31  | 16                   | 1. 40. 38 I  |
| 6                           | 11* 0. 17  | 13                           | 19. 43. 2  | 16                   | 3. 13. 10 E  |
| 8                           | 5* 28. 19  | 17                           | 9* 0. 25   | 23                   | 5* 38. 46 I  |
| 9                           | 23. 56. 16 | 20                           | 22. 17. 44 | 23                   | 7* 11. 26 E  |
| 11                          | 18. 24. 17 | 24                           | 11* 35. 4  | 30                   | 9* 36. 59 I  |
| 13                          | 12* 52. 13 | 28                           | 0. 52. 27  | 30                   | 11* 9. 45 E  |
| 15                          | 7* 20. 12  | 31                           | 14. 9. 46  | IV. Satellite. Conj. |              |
| 17                          | 1. 48. 7   |                              |            | 7                    | 19. 32 Inf.  |
| 18                          | 20. 16. 7  |                              |            | 16                   | 4. 37 Sup.   |
| 20                          | 14. 44. 4  |                              |            | 24                   | 13* 40 Inf.  |
| 22                          | 9* 12. 1   |                              |            |                      |              |
| 24                          | 3. 39. 57  |                              |            |                      |              |
| 25                          | 22. 7. 51  |                              |            |                      |              |
| 27                          | 16. 35. 53 |                              |            |                      |              |
| 29                          | 11* 3. 52  |                              |            |                      |              |
| 31                          | 5* 31. 52  |                              |            |                      |              |



[136] D E C E M B E R 1774.

| Days. | Heliocen-<br>tric Lon-<br>gitude. | Heliocen-<br>tric Lati-<br>tude. | Geocen-<br>tric Lon-<br>gitude. | Geocen-<br>tric La-<br>titude. | Declin-<br>ation. | Passage<br>over<br>Merid. |
|-------|-----------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------|---------------------------|
|       | S. D. M.                          | D. M.                            | S. D. M.                        | D. M.                          | D. M.             | H. M.                     |

M E R C U R Y. Inf.  $\delta$   $4^d. 20\frac{1}{2}^h$ . Gr. El.  $24^d$ .

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 1. 19. 16 | 0. 25 N | 8. 18. 17 | 0. 11 N | 22. 46 S | 0. 38  |
| 7  | 2. 26. 54 | 4. 36   | 8. 10. 28 | 2. 4    | 20. 0    | 23. 32 |
| 13 | 4. 3. 3   | 6. 49   | 8. 5. 29  | 2. 53   | 18. 24   | 22. 49 |
| 19 | 5. 4. 9   | 6. 38   | 8. 6. 34  | 2. 38   | 18. 50   | 22. 29 |
| 25 | 5. 29. 51 | 5. 2    | 8. 11. 39 | 1. 55   | 20. 19   | 22. 25 |

V E N U S.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 7. 18. 29 | 1. 30 N | 8. 0. 35  | 0. 39 N | 19. 40 S | 23. 24 |
| 7  | 7. 28. 3  | 0. 58   | 8. 8. 8   | 0. 25   | 21. 17   | 23. 29 |
| 13 | 8. 7. 36  | 0. 25 N | 8. 15. 41 | 0. 11 N | 22. 31   | 23. 35 |
| 19 | 8. 17. 7  | 0. 9 S  | 8. 23. 14 | 0. 4 S  | 23. 21   | 23. 41 |
| 25 | 8. 26. 38 | 0. 42   | 9. 0. 48  | 0. 18   | 23. 46   | 23. 48 |

M A R S.

|    |           |         |           |         |          |        |
|----|-----------|---------|-----------|---------|----------|--------|
| 1  | 3. 27. 53 | 1. 44 N | 5. 4. 47  | 2. 19 N | 11. 55 N | 17. 52 |
| 7  | 4. 0. 35  | 1. 46   | 5. 7. 0   | 2. 28   | 11. 15   | 17. 39 |
| 13 | 4. 3. 17  | 1. 47   | 5. 9. 1   | 2. 38   | 10. 38   | 17. 21 |
| 19 | 4. 5. 58  | 1. 48   | 5. 10. 48 | 2. 48   | 10. 7    | 17. 1  |
| 25 | 4. 8. 38  | 1. 49   | 5. 12. 16 | 2. 58   | 9. 42    | 16. 39 |

J U P I T E R.

|    |           |        |          |         |          |       |
|----|-----------|--------|----------|---------|----------|-------|
| 1  | 1. 13. 35 | 1. 5 S | 1. 7. 36 | 1. 18 S | 12. 49 N | 9. 50 |
| 7  | 1. 14. 7  | 1. 4   | 1. 7. 4  | 1. 17   | 12. 41   | 9. 22 |
| 13 | 1. 14. 40 | 1. 4   | 1. 6. 39 | 1. 15   | 12. 34   | 8. 54 |
| 19 | 1. 15. 12 | 1. 4   | 1. 6. 21 | 1. 14   | 12. 30   | 8. 26 |
| 25 | 1. 15. 45 | 1. 3   | 1. 6. 9  | 1. 12   | 12. 28   | 7. 59 |

S A T U R N.  $\square$   $29^d. 15\frac{1}{2}^h$ .

|    |          |         |          |         |         |        |
|----|----------|---------|----------|---------|---------|--------|
| 1  | 6. 1. 43 | 2. 21 N | 6. 6. 59 | 2. 16 N | 0. 42 N | 19. 55 |
| 7  | 6. 1. 55 | 2. 22   | 6. 7. 26 | 2. 17   | 0. 51   | 19. 31 |
| 13 | 6. 2. 7  | 2. 22   | 6. 7. 49 | 2. 18   | 0. 59   | 19. 5  |
| 19 | 6. 2. 19 | 2. 22   | 6. 8. 9  | 2. 20   | 1. 6    | 18. 40 |
| 25 | 6. 2. 31 | 2. 22   | 6. 8. 26 | 2. 22   | 1. 11   | 18. 15 |

# D E C E M B E R 1774. [137]

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|--------------------|-------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
|                    |                   | S. D. M. S.               | S. D. M. S.                   | D. M. S.                 | D. M. S.                 |
| 1                  | Th.               | 7. 10. 55. 55             | 7. 18. 10. 36                 | 4. 26. 46 N              | 4. 42. 8 N               |
| 2                  | F.                | 7. 25. 31. 23             | 8. 2. 57. 21                  | 4. 53. 1                 | 4. 59. 5                 |
| 3                  | Sa.               | 8. 10. 27. 16             | 8. 18. 0. 7                   | 5. 0. 4                  | 4. 55. 51                |
| 4                  | Su.               | 8. 25. 34. 25             | 9. 3. 8. 54                   | 4. 46. 24                | 4. 31. 55                |
| 5                  | M.                | 9. 10. 42. 8              | 9. 18. 13. 0                  | 4. 12. 41                | 3. 49. 5                 |
| 6                  | Tu.               | 9. 25. 40. 21             | 10. 3. 3. 21                  | 3. 21. 43                | 2. 51. 14                |
| 7                  | W.                | 10. 10. 21. 23            | 10. 17. 33. 57                | 2. 18. 10                | 1. 43. 18                |
| 8                  | Th.               | 10. 24. 40. 39            | 11. 1. 41. 37                 | 1. 7. 13 N               | 0. 30. 33 N              |
| 9                  | F.                | 11. 8. 36. 47             | 11. 15. 26. 14                | 0. 6. 4 S                | 0. 42. 6 S               |
| 10                 | Sa.               | 11. 22. 10. 21            | 11. 28. 49. 21                | 1. 17. 6                 | 1. 50. 35                |
| 11                 | Su.               | 0. 5. 23. 41              | 0. 11. 53. 36                 | 2. 22. 9                 | 2. 51. 33                |
| 12                 | M.                | 0. 18. 19. 34             | 0. 24. 41. 55                 | 3. 18. 23                | 3. 42. 29                |
| 13                 | Tu.               | 1. 1. 0. 57               | 1. 7. 16. 59                  | 4. 3. 35                 | 4. 21. 34                |
| 14                 | W.                | 1. 13. 30. 22             | 1. 19. 41. 17                 | 4. 36. 18                | 4. 47. 39                |
| 15                 | Th.               | 1. 25. 49. 59             | 2. 1. 56. 33                  | 4. 55. 3 2               | 5. 0. 0                  |
| 16                 | F.                | 2. 8. 1. 16               | 2. 14. 4. 19                  | 5. 0. 59                 | 4. 58. 36                |
| 17                 | Sa.               | 2. 20. 5. 41              | 2. 26. 5. 37                  | 4. 52. 49                | 4. 43. 50                |
| 18                 | Su.               | 3. 2. 4. 5                | 3. 8. 1. 27                   | 4. 31. 45                | 4. 16. 42                |
| 19                 | M.                | 3. 13. 57. 43             | 3. 19. 53. 5                  | 3. 58. 50                | 3. 38. 27                |
| 20                 | Tu.               | 3. 25. 47. 59             | 4. 1. 42. 26                  | 3. 15. 41                | 2. 50. 46                |
| 21                 | W.                | 4. 7. 36. 55              | 4. 13. 31. 49                 | 2. 24. 0                 | 1. 55. 36                |
| 22                 | Th.               | 4. 19. 27. 29             | 4. 25. 24. 28                 | 1. 25. 48                | 0. 55. 0 S               |
| 23                 | F.                | 5. 1. 23. 16              | 5. 7. 24. 30                  | 0. 23. 19 S              | 0. 8. 51 N               |
| 24                 | Sa.               | 5. 13. 28. 38             | 5. 19. 36. 29                 | 0. 41. 10 N              | 1. 13. 24                |
| 25                 | Su.               | 5. 25. 48. 31             | 6. 2. 5. 27                   | 1. 45. 7                 | 2. 16. 1                 |
| 26                 | M.                | 6. 8. 27. 53              | 6. 14. 56. 22                 | 2. 45. 40                | 3. 13. 40                |
| 27                 | Tu.               | 6. 21. 31. 28             | 6. 28. 13. 37                 | 3. 39. 33                | 4. 2. 56                 |
| 28                 | W.                | 7. 5. 3. 8                | 7. 12. 0. 16                  | 4. 23. 18                | 4. 40. 10                |
| 29                 | Th.               | 7. 19. 4. 52              | 7. 26. 16. 51                 | 4. 53. 5                 | 5. 1. 37                 |
| 30                 | F.                | 8. 3. 35. 48              | 8. 11. 1. 8                   | 5. 5. 23                 | 5. 4. 6                  |
| 31                 | Sa.               | 8. 18. 31. 52             | 8. 26. 6. 55                  | 4. 57. 36                | 4. 45. 50                |

[138]      D E C E M B E R      1774.

| Days of the Month. | Days of the Month. | Days of the Month. | Day's Passage over Merid. | Day's Right Ascen. at Noon. | Day's Right Ascen. at Midn. | Day's Declinat. at Noon. | Day's Declinat. at Midn. |
|--------------------|--------------------|--------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|--------------------------|
|                    |                    |                    | H. M.                     | D. M.                       | D. M.                       | D. M.                    | D. M.                    |
| 1                  | Th.                | 29                 | 22. 59                    | 219. 55                     | 227. 3                      | 10. 54 S                 | 12. 45 S                 |
| 2                  | F.                 | 30                 | 23. 59                    | 234. 23                     | 241. 54                     | 14. 25                   | 15. 53                   |
| 3                  | Sa.                | 1                  | 6                         | 249. 36                     | 257. 25                     | 17. 5                    | 18. 1                    |
| 4                  | Su.                | 2                  | 1. 0                      | 265. 21                     | 273. 19                     | 18. 37                   | 18. 54                   |
| 5                  | M.                 | 3                  | 2. 2                      | 281. 17                     | 289. 12                     | 18. 50                   | 18. 26                   |
| 6                  | Tu.                | 4                  | 3. 2                      | 297. 0                      | 304. 40                     | 17. 44                   | 16. 43                   |
| 7                  | W.                 | 5                  | 4. 0                      | 312. 10                     | 319. 29                     | 15. 27                   | 13. 57                   |
| 8                  | Th.                | 6                  | 4. 55                     | 326. 36                     | 333. 31                     | 12. 15                   | 10. 25                   |
| 9                  | F.                 | 7                  | 5. 47                     | 340. 17                     | 347. 52                     | 8. 27                    | 6. 24                    |
| 10                 | Sa.                | 8                  | 6. 36                     | 353. 19                     | 359. 39                     | 4. 17                    | 2. 10 S                  |
| 11                 | Su.                | 9                  | 7. 23                     | 5. 53                       | 12. 3                       | 0. 2 S                   | 2. 4 N                   |
| 12                 | M.                 | 10                 | 8. 8                      | 15. 10                      | 24. 15                      | 4. 8 N                   | 6. 8                     |
| 13                 | Tu.                | 11                 | 8. 54                     | 30. 18                      | 36. 22                      | 8. 2                     | 9. 50                    |
| 14                 | W.                 | 12                 | 9. 40                     | 42. 27                      | 48. 34                      | 11. 31                   | 13. 3                    |
| 15                 | Th.                | 13                 | 10. 26                    | 54. 42                      | 60. 53                      | 14. 27                   | 15. 40                   |
| 16                 | F.                 | 14                 | 11. 12                    | 67. 5                       | 73. 20                      | 16. 43                   | 17. 34                   |
| 17                 | Sa.                | 15                 | 12. 0                     | 79. 36                      | 85. 53                      | 18. 14                   | 18. 41                   |
| 18                 | Su.                | 16                 | 12. 47                    | 92. 11                      | 98. 28                      | 18. 55                   | 18. 57                   |
| 19                 | M.                 | 17                 | 13. 24                    | 104. 44                     | 110. 58                     | 18. 46                   | 18. 23                   |
| 20                 | Tu.                | 18                 | 14. 20                    | 117. 9                      | 123. 18                     | 17. 48                   | 17. 2                    |
| 21                 | W.                 | 19                 | 15. 5                     | 129. 23                     | 135. 26                     | 16. 4                    | 14. 56                   |
| 22                 | Th.                | 20                 | 15. 51                    | 141. 25                     | 147. 22                     | 13. 39                   | 12. 12                   |
| 23                 | F.                 | 21                 | 16. 35                    | 153. 17                     | 159. 10                     | 10. 38                   | 8. 56                    |
| 24                 | Sa.                | 22                 | 17. 19                    | 165. 3                      | 170. 56                     | 7. 8                     | 5. 15                    |
| 25                 | Su.                | 23                 | 18. 3                     | 176. 51                     | 182. 49                     | 3. 17 N                  | 1. 15 N                  |
| 26                 | M.                 | 24                 | 18. 49                    | 188. 52                     | 195. 0                      | 0. 49 S                  | 2. 55 S                  |
| 27                 | Tu.                | 25                 | 19. 37                    | 201. 16                     | 207. 40                     | 5. 0                     | 7. 4                     |
| 28                 | W.                 | 26                 | 20. 29                    | 214. 15                     | 221. 1                      | 9. 5                     | 11. 0                    |
| 29                 | Th.                | 27                 | 21. 25                    | 227. 59                     | 235. 10                     | 12. 48                   | 14. 27                   |
| 30                 | F.                 | 28                 | 22. 25                    | 242. 34                     | 250. 11                     | 15. 54                   | 17. 6                    |
| 31                 | Sa.                | 29                 | 23. 27                    | 257. 59                     | 265. 55                     | 18. 2                    | 18. 30                   |



# D E C E M B E R 1774. [139]

| Days of the Month. | Days of the Week. | Semidr. D at Noon. | Semidr. D at Midnight. | Hor. Par. D at Noon. | Hor. Par. D at Midnight. | Propor. Lo- gar. at Noon. | Propor. Lo- gar. at Mid. |
|--------------------|-------------------|--------------------|------------------------|----------------------|--------------------------|---------------------------|--------------------------|
|                    |                   | M. S.              | M. S.                  | M. S.                | M. S.                    |                           |                          |
| 1                  | Th.               | 16. 15             | 16. 21                 | 50. 37               | 60. 0                    | 4799                      | 4771                     |
| 2                  | F.                | 16. 26             | 16. 32                 | 60. 20               | 60. 39                   | 4747                      | 4724                     |
| 3                  | Sa.               | 16. 35             | 16. 38                 | 60. 52               | 61. 2                    | 4700                      | 4697                     |
| 4                  | Su.               | 16. 39             | 16. 39                 | 61. 6                | 61. 7                    | 4692                      | 4691                     |
| 5                  | M.                | 16. 38             | 16. 36                 | 61. 3                | 60. 55                   | 4696                      | 4705                     |
| 6                  | Tu.               | 16. 33             | 16. 29                 | 60. 43               | 60. 28                   | 4719                      | 4737                     |
| 7                  | W.                | 16. 24             | 16. 18                 | 60. 10               | 59. 50                   | 4759                      | 4783                     |
| 8                  | Th.               | 16. 12             | 16. 6                  | 59. 28               | 59. 6                    | 4810                      | 4837                     |
| 9                  | F.                | 16. 0              | 15. 53                 | 58. 43               | 58. 19                   | 4865                      | 4895                     |
| 10                 | Sa.               | 15. 47             | 15. 41                 | 57. 56               | 57. 33                   | 4923                      | 4952                     |
| 11                 | Su.               | 15. 35             | 15. 29                 | 57. 11               | 56. 51                   | 4980                      | 5005                     |
| 12                 | M.                | 15. 24             | 15. 19                 | 56. 31               | 56. 13                   | 5031                      | 5054                     |
| 13                 | Tu.               | 15. 14             | 15. 10                 | 55. 55               | 55. 38                   | 5077                      | 5099                     |
| 14                 | W.                | 15. 6              | 15. 2                  | 55. 25               | 55. 12                   | 5116                      | 5133                     |
| 15                 | Th.               | 14. 59             | 14. 56                 | 55. 0                | 54. 48                   | 5149                      | 5165                     |
| 16                 | F.                | 14. 53             | 14. 51                 | 54. 38               | 54. 30                   | 5178                      | 5189                     |
| 17                 | Sa.               | 14. 49             | 14. 48                 | 54. 23               | 54. 17                   | 5198                      | 5206                     |
| 18                 | Su.               | 14. 46             | 14. 45                 | 54. 12               | 54. 9                    | 5213                      | 5217                     |
| 19                 | M.                | 14. 45             | 14. 44                 | 54. 6                | 54. 5                    | 5221                      | 5222                     |
| 20                 | Tu.               | 14. 44             | 14. 45                 | 54. 6                | 54. 7                    | 5221                      | 5219                     |
| 21                 | W.                | 14. 46             | 14. 48                 | 54. 11               | 54. 18                   | 5214                      | 5205                     |
| 22                 | Th.               | 14. 50             | 14. 52                 | 54. 25               | 54. 35                   | 5195                      | 5182                     |
| 23                 | F.                | 14. 55             | 14. 59                 | 54. 46               | 55. 0                    | 5167                      | 5149                     |
| 24                 | Sa.               | 15. 4              | 15. 8                  | 55. 16               | 55. 34                   | 5128                      | 5104                     |
| 25                 | Su.               | 15. 14             | 15. 20                 | 55. 55               | 56. 17                   | 5077                      | 5049                     |
| 26                 | M.                | 15. 27             | 15. 34                 | 56. 41               | 57. 8                    | 5018                      | 4984                     |
| 27                 | Tu.               | 15. 41             | 15. 49                 | 57. 35               | 58. 3                    | 4950                      | 4915                     |
| 28                 | W.                | 15. 57             | 16. 5                  | 58. 32               | 59. 1                    | 4878                      | 4843                     |
| 29                 | Th.               | 16. 13             | 16. 20                 | 59. 29               | 59. 56                   | 4800                      | 4770                     |
| 30                 | F.                | 16. 26             | 16. 32                 | 60. 20               | 60. 42                   | 4747                      | 4721                     |
| 31                 | Sa.               | 16. 37             | 16. 41                 | 61. 0                | 61. 15                   | 4699                      | 4681                     |

[140] DECEMBER 1774.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days. | Stars Names.      | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|-------------------|-------------|-------------|-------------|-------------|
|       |                   | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 5     | $\alpha$ Pegasi.  | 69. 25. 11  | 67. 40. 35  | 65. 56. 22  | 64. 12. 33  |
| 6     |                   | 55. 40. 39  | 54. 0. 1    | 52. 20. 11  | 50. 41. 9   |
| 7     |                   | 42. 39. 54  |             |             |             |
| 7     | $\alpha$ Arietis. | 83. 51. 19  | 82. 5. 43   | 80. 20. 30  | 78. 35. 39  |
| 8     |                   | 69. 57. 21  | 68. 14. 54  | 66. 32. 53  | 64. 51. 19  |
| 9     |                   | 56. 30. 32  | 54. 51. 53  | 53. 13. 47  | 51. 36. 15  |
| 10    |                   | 43. 37. 23  |             |             |             |
| 10    | Aldebaran.        | 74. 25. 33  | 72. 45. 0   | 71. 4. 47   | 69. 24. 53  |
| 11    |                   | 61. 10. 0   | 59. 31. 56  | 57. 54. 9   | 56. 16. 38  |
| 12    |                   | 48. 13. 4   | 46. 37. 7   | 45. 1. 25   | 43. 25. 56  |
| 13    |                   | 35. 31. 59  | 33. 57. 50  | 32. 23. 53  | 30. 50. 8   |
| 14    |                   | 23. 4. 6    |             |             |             |
| 14    | Pollux.           | 67. 26. 21  | 65. 55. 26  | 64. 24. 43  | 62. 54. 12  |
| 15    |                   | 55. 24. 40  | 53. 55. 24  | 52. 26. 20  | 50. 57. 31  |
| 16    |                   | 43. 36. 47  | 42. 9. 23   | 40. 42. 17  | 39. 15. 30  |
| 17    |                   | 32. 7. 1    |             |             |             |
| 17    | Regulus.          | 66. 44. 32  | 65. 14. 43  | 63. 45. 0   | 62. 15. 23  |
| 18    |                   | 54. 48. 31  | 53. 19. 18  | 51. 50. 9   | 50. 21. 3   |
| 19    |                   | 42. 56. 25  | 41. 27. 38  | 39. 58. 53  | 38. 30. 10  |
| 20    |                   | 31. 6. 45   | 29. 38. 8   | 28. 9. 31   | 26. 40. 54  |
| 21    |                   | 19. 17. 49  |             |             |             |
| 21    | Spica $\mu$       | 73. 1. 17   | 71. 32. 52  | 70. 4. 26   | 68. 35. 57  |
| 22    |                   | 61. 12. 48  | 59. 43. 58  | 58. 15. 3   | 56. 46. 3   |
| 23    |                   | 49. 19. 34  | 47. 49. 55  | 46. 20. 9   | 44. 50. 15  |
| 24    |                   | 37. 18. 57  | 35. 48. 18  | 34. 17. 30  | 32. 46. 32  |
| 25    |                   | 25. 10. 22  | 23. 38. 51  | 22. 7. 34   | 20. 36. 32  |
| 26    |                   | 13. 8. 19   |             |             |             |
| 23    | The Sun.          | 120. 26. 41 | 119. 4. 16  | 117. 41. 41 | 116. 18. 57 |
| 24    |                   | 109. 22. 26 | 107. 58. 28 | 106. 34. 14 | 105. 9. 47  |
| 25    |                   | 98. 3. 35   | 96. 37. 29  | 95. 11. 5   | 93. 44. 22  |
| 26    |                   | 86. 25. 53  | 84. 57. 8   | 83. 28. 1   | 81. 58. 31  |
| 27    |                   | 74. 25. 11  | 72. 53. 18  | 71. 20. 59  | 69. 48. 15  |
| 28    |                   | 61. 58. 8   | 60. 22. 47  | 58. 46. 59  | 57. 10. 45  |
| 29    |                   | 49. 3. 7    | 47. 24. 18  | 45. 45. 4   | 44. 5. 27   |

# D E C E M B E R 1774. [141]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

| Days.                                  | Stars Names.     | 12 Hours.                                                                                    | 15 Hours.                                                                                     | 18 Hours.                                                                                     | 21 Hours.                                                                                     |
|----------------------------------------|------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                                        |                  | D. M. S.                                                                                     | D. M. S.                                                                                      | D. M. S.                                                                                      | D. M. S.                                                                                      |
| 4<br>5<br>6                            | $\alpha$ Pegasi. | 76. 26. 13<br>62. 29. 7<br>49. 2. 54                                                         | 74. 40. 38<br>60. 46. 8<br>47. 25. 37                                                         | 72. 55. 15<br>59. 3. 44<br>45. 49. 18                                                         | 71. 10. 5<br>57. 21. 54<br>44. 14. 3                                                          |
| 7<br>8<br>9                            | $\alpha$ Arietis | 76. 51. 11<br>63. 10. 12<br>49. 59. 16                                                       | 75. 7. 7<br>61. 29. 32<br>48. 22. 52                                                          | 73. 23. 27<br>59. 49. 22<br>46. 47. 6                                                         | 71. 40. 12<br>58. 9. 42<br>45. 11. 55                                                         |
| 10<br>11<br>12<br>13                   | Aldebaran.       | 67. 45. 18<br>54. 39. 24<br>41. 50. 42<br>29. 16. 34                                         | 66. 6. 1<br>53. 2. 25<br>40. 15. 42<br>27. 43. 11                                             | 64. 27. 3<br>51. 25. 43<br>38. 40. 54<br>26. 9. 59                                            | 62. 48. 22<br>49. 49. 16<br>37. 6. 20<br>24. 36. 57                                           |
| 14<br>15<br>16                         | Pollux.          | 61. 23. 53<br>49. 28. 54<br>37. 49. 3                                                        | 59. 53. 46<br>48. 0. 30<br>36. 22. 57                                                         | 58. 23. 51<br>46. 32. 20<br>34. 57. 14                                                        | 56. 54. 9<br>45. 4. 26<br>33. 31. 55                                                          |
| 17<br>18<br>19<br>20                   | Regulus.         | 60. 45. 52<br>48. 52. 1<br>37. 1. 28<br>25. 12. 18                                           | 59. 16. 26<br>47. 23. 3<br>35. 32. 46<br>23. 43. 42                                           | 57. 47. 3<br>45. 54. 8<br>34. 4. 5<br>22. 15. 5                                               | 56. 17. 45<br>44. 25. 15<br>32. 35. 24<br>20. 46. 27                                          |
| 21<br>22<br>23<br>24<br>25             | Spica $\mu$      | 67. 7. 26<br>55. 16. 57<br>43. 20. 14<br>31. 15. 26<br>19. 5. 44                             | 65. 38. 52<br>53. 47. 46<br>41. 50. 7<br>29. 44. 13<br>17. 35. 26                             | 64. 10. 15<br>52. 18. 29<br>40. 19. 51<br>28. 12. 58<br>16. 5. 42                             | 62. 41. 33<br>50. 49. 4<br>38. 49. 28<br>26. 41. 42<br>14. 36. 37                             |
| 23<br>24<br>25<br>26<br>27<br>28<br>29 | The Sun.         | 114. 56. 3<br>103. 45. 4<br>92. 17. 21<br>80. 28. 39<br>68. 15. 6<br>55. 34. 4<br>42. 25. 25 | 113. 32. 58<br>102. 20. 7<br>90. 50. 0<br>78. 58. 23<br>66. 41. 31<br>53. 56. 58<br>40. 45. 0 | 112. 9. 40<br>100. 54. 53<br>89. 22. 18<br>77. 27. 43<br>65. 7. 30<br>52. 19. 27<br>39. 4. 13 | 110. 46. 9<br>99. 29. 22<br>87. 54. 16<br>75. 56. 39<br>63. 33. 2<br>50. 41. 30<br>38. 12. 17 |



## 142] DECEMBER 1774.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

| Days. | Stars Names       | Noon.       | 3 Hours.    | 6 Hours.    | 9 Hours.    |
|-------|-------------------|-------------|-------------|-------------|-------------|
|       |                   | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1     | Spica $\alpha$    | 21. 13. 59  | 22. 58. 28  | 24. 43. 41  | 26. 29. 37  |
| 2     |                   | 35. 28. 30  |             |             |             |
| 6     | The Sun.          | 41. 15. 39  | 42. 58. 21  | 44. 40. 51  | 46. 23. 8   |
| 7     |                   | 54. 50. 51  | 56. 31. 31  | 58. 11. 54  | 59. 51. 59  |
| 8     |                   | 68. 7. 23   | 69. 45. 27  | 71. 23. 11  | 73. 0. 34   |
| 9     |                   | 81. 2. 12   | 82. 37. 27  | 84. 12. 21  | 85. 46. 54  |
| 10    |                   | 93. 34. 40  | 95. 7. 12   | 96. 39. 25  | 98. 11. 19  |
| 11    |                   | 105. 46. 9  | 107. 16. 13 | 108. 45. 59 | 110. 15. 28 |
| 12    |                   | 117. 38. 47 | 119. 6. 40  | 120. 34. 17 |             |
| 10    | Aquilæ.           | 59. 33. 48  | 61. 0. 32   | 62. 27. 22  | 63. 54. 18  |
| 11    |                   | 71. 9. 34   | 72. 36. 32  | 74. 3. 24   | 75. 30. 12  |
| 12    |                   | 82. 42. 32  |             |             |             |
| 12    | Fomalhaut.        | 49. 35. 9   | 50. 59. 26  | 52. 23. 57  | 53. 48. 40  |
| 13    |                   | 60. 54. 45  | 62. 20. 16  | 63. 45. 50  | 65. 11. 27  |
| 14    |                   | 72. 19. 35  |             |             |             |
| 14    | $\alpha$ Pegasi.  | 57. 31. 0   | 58. 55. 30  | 60. 20. 5   | 61. 44. 45  |
| 15    |                   | 68. 48. 49  | 70. 13. 41  | 71. 38. 32  | 73. 3. 23   |
| 16    |                   | 80. 7. 16   |             |             |             |
| 16    | $\alpha$ Arietis. | 36. 34. 45  | 37. 57. 38  | 39. 20. 52  | 40. 44. 23  |
| 17    |                   | 47. 45. 47  | 49. 10. 38  | 50. 35. 37  | 52. 0. 43   |
| 18    |                   | 59. 7. 28   |             |             |             |
| 18    | Aldebaran.        | 25. 20. 18  | 26. 49. 32  | 28. 18. 42  | 29. 47. 49  |
| 19    |                   | 37. 12. 38  | 38. 41. 27  | 40. 10. 15  | 41. 39. 1   |
| 20    |                   | 49. 2. 45   | 50. 31. 27  | 52. 0. 9    | 53. 28. 51  |
| 21    |                   | 60. 52. 39  | 62. 21. 31  | 63. 50. 26  | 65. 19. 24  |
| 22    |                   | 72. 45. 10  |             |             |             |
| 22    | Pollux.           | 30. 22. 56  | 31. 46. 53  | 33. 11. 17  | 34. 36. 8   |
| 23    |                   | 41. 46. 39  | 43. 13. 51  | 44. 41. 22  | 46. 9. 13   |
| 24    |                   | 53. 32. 59  |             |             |             |
| 24    | Regulus.          | 16. 46. 23  | 18. 18. 7   | 19. 50. 5   | 21. 22. 20  |
| 25    |                   | 29. 7. 35   | 30. 41. 31  | 32. 15. 46  | 33. 50. 21  |
| 26    |                   | 41. 48. 12  | 43. 24. 50  | 45. 1. 50   | 46. 39. 13  |
| 27    |                   | 54. 52. 1   | 56. 31. 49  | 58. 12. 3   | 59. 52. 43  |
| 28    |                   | 68. 22. 36  | 70. 5. 55   | 71. 49. 42  | 73. 33. 57  |
| 29    | Spica $\alpha$    | 29. 11. 12  | 30. 56. 4   | 32. 41. 33  | 34. 27. 39  |
| 30    |                   | 43. 26. 27  | 45. 15. 41  | 47. 5. 22   | 48. 55. 27  |
| 31    |                   | 58. 11. 44  | 60. 4. 0    | 61. 56. 33  | 63. 49. 22  |

# D E C E M B E R 1774. [143]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

| Days | Stars Names.      | 12 Hours.   | 15 Hours.   | 18 Hours.   | 21 Hours.   |
|------|-------------------|-------------|-------------|-------------|-------------|
|      |                   | D. M. S.    | D. M. S.    | D. M. S.    | D. M. S.    |
| 1    | Spica $\alpha$    | 28. 16. 15  | 30. 3. 31   | 31. 51. 18  | 33. 39. 38  |
| 5    | The Sun.          |             |             |             | 39. 32. 46  |
| 6    |                   | 48. 5. 12   | 49. 47. 1   | 51. 28. 34  | 53. 9. 51   |
| 7    |                   | 61. 31. 47  | 63. 11. 8   | 64. 50. 12  | 66. 28. 56  |
| 8    |                   | 74. 37. 36  | 76. 14. 17  | 77. 50. 37  | 79. 26. 35  |
| 9    |                   | 87. 21. 7   | 88. 55. 0   | 90. 28. 34  | 92. 1. 47   |
| 10   |                   | 99. 42. 53  | 101. 14. 9  | 102. 45. 7  | 104. 15. 47 |
| 11   |                   | 111. 44. 40 | 113. 13. 36 | 114. 42. 15 | 116. 10. 39 |
| 9    | $\alpha$ Aquilæ.  | 53. 49. 1   | 55. 14. 50  | 56. 40. 56  | 58. 7. 16   |
| 10   |                   | 65. 21. 21  | 66. 48. 25  | 68. 15. 28  | 69. 42. 31  |
| 11   |                   | 76. 56. 55  | 78. 23. 31  | 79. 50. 1   | 81. 16. 21  |
| 12   | Fomalhaut.        | 55. 13. 36  | 56. 38. 42  | 58. 3. 56   | 59. 29. 17  |
| 13   |                   | 66. 37. 6   | 68. 2. 44   | 69. 28. 23  | 70. 54. 0   |
| 14   | $\alpha$ Pegasi.  | 63. 9. 29   | 64. 34. 17  | 65. 59. 6   | 67. 23. 57  |
| 15   |                   | 74. 28. 13  | 75. 53. 2   | 77. 17. 49  | 78. 42. 33  |
| 16   | $\alpha$ Arietis. | 42. 8. 12   | 43. 32. 17  | 44. 56. 34  | 46. 21. 4   |
| 17   |                   | 53. 25. 56  | 54. 51. 14  | 56. 16. 36  | 57. 42. 1   |
| 18   | Aldebaran.        | 31. 16. 53  | 32. 45. 53  | 34. 14. 51  | 35. 43. 46  |
| 19   |                   | 43. 7. 46   | 44. 36. 32  | 46. 5. 17   | 47. 34. 1   |
| 20   |                   | 54. 57. 33  | 56. 26. 17  | 57. 55. 2   | 59. 23. 50  |
| 21   |                   | 66. 48. 25  | 68. 17. 30  | 69. 45. 39  | 71. 15. 52  |
| 22   | Pollux.           | 36. 1. 27   | 37. 27. 11  | 38. 53. 18  | 40. 19. 47  |
| 23   |                   | 47. 37. 23  | 49. 5. 51   | 50. 34. 36  | 52. 3. 39   |
| 24   | Regulus.          | 22. 54. 49  | 24. 27. 35  | 26. 0. 37   | 27. 33. 58  |
| 25   |                   | 35. 25. 14  | 37. 0. 27   | 38. 36. 2   | 40. 11. 56  |
| 26   |                   | 48. 16. 58  | 49. 55. 7   | 51. 33. 40  | 53. 12. 39  |
| 27   |                   | 61. 33. 49  | 63. 15. 21  | 64. 57. 19  | 66. 39. 44  |
| 28   |                   | 75. 18. 40  | .           |             |             |
| 28   | Spica $\alpha$    | 22. 19. 2   | 24. 0. 56   | 25. 43. 36  | 27. 27. 2   |
| 29   |                   | 36. 14. 23  | 38. 1. 38   | 39. 49. 24  | 41. 37. 40  |
| 30   |                   | 50. 45. 59  | 52. 36. 54  | 54. 28. 10  | 56. 19. 46  |
| 31   |                   | 65. 42. 27  |             |             |             |

[144] DECEMBER 1774.

Configurations of the SATELLITES of JUPITER  
at 7 o'clock in the Evening.

|    |         |     |     |       |    |       |      |     |
|----|---------|-----|-----|-------|----|-------|------|-----|
| 1  |         | 4.  |     | 1.    | ⊙  | 7.    |      | 2.0 |
| 2  | 4.      |     | 3.  |       | ⊙  | 1.    | 2.   |     |
| 3  | 4.      |     | 7.  | 1.    | ⊙  |       |      |     |
| 4  | 4.      |     | 3.  | 2.    | ⊙  | 1.    |      |     |
| 5  |         | 4.  |     | 1.    | ⊙  | 2.    |      | 3.0 |
| 6  |         |     | 4.  |       | ⊙  | 1. 2. | 3.   |     |
| 7  | 1.0     |     | 2.  | 4.    | ⊙  |       | 3.   |     |
| 8  | 2.0     |     |     | 1.    | ⊙  | 7.    | 4.   |     |
| 9  |         |     |     | 3.    | ⊙  | 1.    | 2.   | 4.  |
| 10 |         |     | 3.  | 1. 2. | ⊙  |       |      | 4.  |
| 11 |         |     | 3.  | 2.    | ⊙  | 1.    |      | 4.  |
| 12 | 3.0     |     |     | 1.    | ⊙  | 2.    |      | 4.  |
| 13 |         |     |     |       | ⊙  | 1. 2. | 3.   | 4.  |
| 14 | 1.0     |     |     | 2.    | ⊙  |       | 4.3. |     |
| 15 | 1.0     |     |     | 2.    | ⊙  | 4.    | 3.   |     |
| 16 |         |     | 3 4 |       | ⊙  | 1.    | 2.   |     |
| 17 | 2.0     | 3 4 |     | 1.    | ⊙  |       |      |     |
| 18 |         |     | 3.  | 2.    | ⊙  | 1.    |      |     |
| 19 | 4.      |     |     | 1.    | 3. | ⊙     | 2.   |     |
| 20 | 4.      |     |     |       | ⊙  | 1. 2. | 3.   |     |
| 21 |         | 4.  |     | 2.    | 1. | ⊙     |      | 3.  |
| 22 | 1.0     |     | 4.  |       | 2. | ⊙     | 3.   |     |
| 23 | 3.0     |     |     | 4.    | ⊙  | 1.    | 2.   |     |
| 24 | 2.0     |     | 3.  |       | 1. | ⊙     | 4.   |     |
| 25 |         |     | 3.  | 2.    | ⊙  | 1.    | 4.   |     |
| 26 |         |     |     | 1.3.  | ⊙  | 2.    |      | 4.  |
| 27 |         |     |     |       | ⊙  | 1. 2. | 3.   | 4.  |
| 28 |         |     |     | 2.    | 1. | ⊙     |      | 3.  |
| 29 |         |     |     | 2.    | ⊙  | 1.    | 3.   | 4.  |
| 30 | 1.0 3.0 |     |     |       | ⊙  |       | 2.   | 4.  |
| 31 |         |     | 3.  | 1.    | ⊙  | 2.    | 4.   |     |



# EXPLANATION and USE OF THE ARTICLES

Contained in the

ASTRONOMICAL and NAUTICAL EPHEMERIS:

**I**T may be proper first to premise, that all the Calculations are made according to apparent Time by the Meridian of the Royal Observatory at Greenwich. They are likewise adapted to apparent Noon, except where they are otherwise distinguished, as the Eclipses and Configurations of Jupiter's Satellites, the Moon's Places, &c, computed for Midnight, and the Distances of the Moon from the Sun and Stars for every third Hour; which are all computed to the apparent Times set down.

Apparent Time is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same Denomination, and to be counted up to 24 Hours, or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they  
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differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, 15 Hours, belong to January 11 at Three in the Morning by civil Reckoning.

There are 12 Pages for every Month. The first Column of the first Page of each Month contains the Day of the Month; the Second, the Day of the Week expressed concisely by the initial Letter or Letters, *Sa.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: The third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of new and full Moon, and of the first and last Quarter, or two Quadratures with the Sun: Beneath are contained miscellaneous Phænomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixed Stars not less than the fourth Magnitude, by the Moon, as they should happen at Greenwich by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60°. North and 40°. South: The Conjunctions, Oppositions and Quadratures of the superior Planets with the Sun; and the Conjunctions and greatest Elongations of the inferior Planets from the Sun, the Entrance of the Sun into the several Signs, and any other remarkable Phænomena.

The Stars are expressed by Bayer's Characters of Reference. The Conjunction of the Moon or a Planet with a Star, is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately after. The Case is the same with Respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of *Im.* or Immersion, to signify the Disappearance behind the Moon; and *Em.* or Emer-  
*Em.* sion, to signify the Re-appearance of the same. Thus 8<sup>d</sup> ☾ ♄ 16<sup>h</sup>. 22'. signifies that the Moon will be in Conjunction with the Star ♄ on the Eighth Day at 16<sup>h</sup>. 22'. exclusive of Parallax: And 10<sup>d</sup>. ☾ ♄ II Imm. 9<sup>h</sup> 14'. Em. 10<sup>h</sup>. 23' signifies that the Moon will eclipse ♄ II on the 10th Day, the Immersion being at 9<sup>h</sup> 14'. and at 10<sup>h</sup>. 23'. apparent Time at Greenwich.

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The Occultations set down are those only visible at Greenwich; and the Circumstances will not differ very widely in most Parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

Eclipses of the Sun, and Occultations of fixed Stars by the Moon, if observed in Places whose Latitude and Longitude are well determined, may be applied to the Correction of the lunar Tables; but if made in Places whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been at all or but indifferently determined; since the necessary Calculations may be made at any Time afterwards by themselves, at leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where an Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the Ephemeris, and converting it into Degrees, at the Rate of 15 to One Hour, &c. or more briefly by Table Pages 6, 7, 8. of the Tables requisite to be used with the Ephemeris. But as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. It is unnecessary to mention that even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a considerably greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixed Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out



frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Days of the Oppositions, Quadratures, &c. of the Planets with Respect to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Two first Columns of the Second Page of the Month contain the Day of the Month and Week as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time, with the Difference from Day to Day.

The Longitude of the Sun is made use of in most of the succeeding Calculations of the Ephemeris, and may serve either to verify them, or to make other similar Calculations at a different Time of the Day. Particularly it may serve with the Help of the Moon's Longitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the Four last Pages of the Mon.h. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying as  $24^h$ . is to the Hour from Noon reckoned by the Meridian of Greenwich, so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from Greenwich, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to  $15^\circ$ , and One Minute of Time to 15 Minutes, or more briefly by Pages 6, 7, and 8, of the requisite Tables) according as the Place is to the West or to the East of Greenwich. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at  $4^h. 35'$ . being in  $21^\circ 15'$ . Longitude East of Greenwich. The Difference of Longitude turned into Time by Table Page 6, is  $1^h. 25'$  which subtracted from  $4^h. 35'$ . because the Place is East of Greenwich, leaves  $3^h. 10'$ . for the Time reduced to the Meridian of Greenwich. The Sun's Longitude the preceding Noon is,  $9^\circ. 29'. 18''. 2'''$ . and the following Noon is,  $10^\circ. 0'. 19'. 4'''$ . the Difference is,  $1^\circ. 1'. 2'''$ . or  $61'. 2'''$ . the daily Variation. Then say, as  $24^h$ . is to  $3^h. 10'$ . so is  $61'. 2'''$  to  $8'. 3'''$ . which added to  $9^\circ. 29'. 18''. 2'''$ . the Sun's Longitude on the preceding

preceding Noon, gives  $9^{\circ}.29'.26''.5''$  the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the Ephemeris.

The Sun's Longitude serves also to compute the Aberration of the fixed Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpose, the Sun's right Ascension at the preceding Noon, together with the Increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the Ephemeris.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star's passing the Meridian: Thus subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixed Star, suppose one contained Page 12 or 13 of the requisite Tables; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required jointly with the Latitude of the Place and the Sun's horary Angle to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance  
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from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes, the Sun's Declination must be found to the Time given nearly reduced to the Meridian of Greenwich, making Proportion according to the daily Increase or Decrease, in like Manner as was shewn with Respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shewn by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Centre over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Ascension being rendered further unequal on Account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page 2d; and when applied according to its Title to the Apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it is proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; viz. subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the Ephemeris for the Noon at Greenwich, Proportion must be made according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

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As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the Ephemeris answering to Noon were computed to 0<sup>h</sup>. increased, or 24 Hours diminished, by the Equation of Time: And the Moon's Places set down for Midnight were computed to 12<sup>h</sup>. increased or diminished by the Equation of Time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having little to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the Ephemeris, all the Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.

But if Watches made upon Mr. John Harrison's or other equivalent Principles should be brought into Use at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shewn by the Watch, the Difference will be the Longitude in Time from the Meridian by which the Watch was set; as near as the Going of the Watch can be depended upon.

The Equation of Time was computed for the Ephemeris of 1767 from the Table, Page 3d of Mayer's Tables; but on Account of that Table being made only to the nearest Second without Decimals, and the Neglect of the small Equations of the Sun, the Calculations of that Article in the Year 1767, cannot always be depended upon nearer than Two Seconds. For the Year 1768 and the following Years it will be computed in the strict Manner explained in my Remarks upon that Subject, in the *Philos. Transact.* Vol. liv. P. 342 for the Year 1764; namely, by taking the Difference of the Sun's true right Ascension, and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1<sup>h</sup>. to 15<sup>h</sup>. &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude.

The Semidiameter of the Sun, Page 3d, is necessary to reduce the observed Altitude of his upper or lower Limb to that  
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of the Centre; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centres. It is also useful to Astronomers to verify or ascertain the Exactness of the Scale of their Micro-meters, by Comparison with the Measure of the Sun's horizontal Diameter. This Practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Verse Sine of the uneclipsed Part has been measured with the Micro-meter. The Semidiameters of the Sun in Mayer's Tables, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be  $16'. 2''$ , 8. which Mr. Mayer says he deduced from above 130 Observations taken with his Six Foot mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this Opportunity to remark that the Quadrant here mentioned was given to the University of Göttingen by his late Majesty, and was made by Mr. John Bird after the Model of the Eight Foot mural Arch, which he finished for the Royal Observatory at Greenwich, and put up there in the Year 1750. Mr. Mayer made his Observations with his Six Foot mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at  $23^{\circ}. 28'. 16''$ . which Dr. Bradley settled by his Observations made in the Years 1750 and 1751, at  $23^{\circ}. 28'. 18''$ . The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about  $\frac{1}{2}$  a Second in a Year. The same Instrument he also used in settling the Elements of his solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his solar Tables; the Agreement of this Table with Dr. Bradley's, see Page 2d of requisite Tables, (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than Two different Tables.

The Time of the Sun's Semidiameter passing the Meridian, serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Centre, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an Interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Cosine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of  $1'$ . to  $15'$ . and  $1''$ . to  $15''$ . gives the  
Time

Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Cosine of his Declination to the logistic Logarithm of his Semidiameter, the Sum is the logistic Logarithm of his Semidiameter in right Ascension; which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to sidereal Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required.

From the Time of the Sun's Semidiameter passing the Meridian may be also found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.—The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independant of the Distances contained in the nautical Ephemeris; See British Mariner's Guide, Page 49, and Table at the End of the same, Page 25, which is also copied at Page 14 of requisite Tables. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Position of the most distant Places determined to equal Accuracy with the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses, and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from Time to Time. In my Voyage to Barbadoes under the Direction of the Commissioners of Longitude, I made a full Trial of the late Mr. Irwin's Marine Chair proposed for this Purpose, but found it totally impracticable to derive any Advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as

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Irregularities



Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the *Desiderata*. However, I would not be understood to mean to discourage any Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes, from 15 to 20 Feet, reflecting Telescopes of 18 Inches or Two Feet, and Telescopes of Mr. Dollond's Construction with Two Object Glasses from Five to 10 Feet; or, which are still more convenient, those of  $3\frac{1}{2}$  Feet, which he has lately found a Method of constructing with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of Comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons who visit distant Countries are not more diligent to multiply Observations of this Kind, for want of which, the Observations made by Astronomers on Shore lose Half their Use, and the Improvement of Geography seems to be at a Stand. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the Purpose. The Eclipses carefully calculated and set down in the Ephemeris, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person who shall be under any Meridian different from Greenwich, must turn his Difference of Longitude into Time: See Table Page 6, 7, and 8, and add it to or subtract it from the Time of the Eclipse set down in the Ephemeris, according as he is to the East or West of Greenwich, to find the apparent Time at which the Eclipse will happen at his Meridian, nearly. He must further take care to regulate his Watch or Clock by apparent Time, or at least to know the Difference, as well in order to apprise him of the Time to look out for  
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the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a Hadley's Quadrant, by Reflection from a Basin of Water or Quicksilver, or from the Horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above mentioned, at least Two or Three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made on Purpose. It will be better to take several Altitudes in order to take a Mean of the Results for greater Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star, will be observed when we come to treat of the Method of finding the Longitude by the Observations of the Distance of the Moon from the Sun and Stars by the Help of the Ephemeris.

The Observer being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on Account of the Uncertainty of their Theories; but, if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus if the Longitude of the Place is uncertain to 30 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless when he has observed One Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the Ephemeris for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emergences signify the first Instant of its Appearance at coming

ing out of the fame. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emerfions happen on the West Side of Jupiter, and after the Opposition on the East Side; but if an astronomical Telescope be used, which reverses Objects, the Appearances will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emerfions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the Two outer Satellites. The Immersions and Emerfions marked with an Asterisk in the Ephemeris are those visible at Greenwich.

To know if an Eclipse will be visible in any Place, find if Jupiter is  $8^{\circ}$ , or  $10^{\circ}$ . above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude by a Table of semi-diurnal Arcs, contained in the popular Book called the Mariner's Compass Rectified, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set down in the Ephemeris, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semidiurnal Arc answering to the same Declination of the Sun: Remembering always that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semidiurnal Arc will be more than Six Hours, and if they are of contrary Denominations, it will be less than Six Hours.

The Immersion or Emerfion of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from Greenwich is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the Ephemeris, which must be turned into Degrees, &c. by Table Page 5, 7, and 8; and will be East or West of Greenwich, as the Time observed is more or less than that of the Ephemeris.

Example: Suppose an Emerfion of the first Satellite should be observed at the Cape of Good-Hope, May 9, 1767, at  $10^h 46'. 45''$ . apparent Time: The Time by the Ephemeris  
being



being  $9^h. 33'. 12''$ . the Difference is  $1^h. 13'. 33''$ . whence by Table Page, 6, 7, and 8, the Longitude of the Cape should be  $18^\circ. 23' 15''$ . East of Greenwich, because the Time supposed to be observed at the Cape is more than that of the Ephemeris.

It may not be useless here to observe that the Longitude of the Cape of Good Hope  $1^h. 13'. 33'' = 18^\circ. 23'. 15''$ . set down in the British Mariner's Guide, is that of the Town; the Latitude also belongs to the same; being both determined from the Observations of Messrs. Mason and Dixon, who went thither under the Direction of the Royal Society, and observed the Transit of Venus in the Year 1761. Hence, by the Help of the Charts, I find the Longitude of the Cape Point or Promontory  $18^\circ. 45'$ . East of Greenwich, and its Latitude  $34^\circ. 30'$ . S. the Longitude of Cape Falso,  $19^\circ. 15'$ . E. and its Latitude  $34^\circ. 34'$ . S. If these Determinations of the Situations of the Cape Point and Cape Falso are in any respect uncertain, it arises from the Imperfection of the Charts I was obliged to make use of, in reducing the Longitude and Latitude from the Cape Town to the Two mentioned Points: For from the near Agreement of the Abbeé de la Caille's Observations with those of Messrs. Mason and Dixon, it is probable that the Situation of few Places is better determined than that of the Cape Town: But if any one has Possession of any Manuscript or printed Charts of these Parts that he thinks may be depended upon, or has any Opportunity of determining the Points in Question relatively to each other from the Comparison of several Journals of Ships, he may perhaps fix these Places with more Certainty than is here pretended to.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well known Meridian, is to be preferred to the Calculations of the Ephemeris for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what Correction the Calculations of the Ephemeris require by the nearest Observations to the given Time that can be obtained; which Correction applied to the Calculation of the given Eclipse in the Ephemeris, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page 4, serve to know where to look for them in the Heavens, and  
when

when their Places may be conveniently settled by comparing them with fixed Stars by the Help of a Micrometer in a Telescope. They also shew when they are in the most important Points of their Orbits, where it is most material to observe them. They also serve to enable Persons less skilled to distinguish them from the fixed Stars. Their Declinations and apparent Time of passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's right Ascension at Noon in Time from it, to find the Time of the Planet's passing the Meridian nearly, which call T; take the Difference of the ☉ and Planets daily Variations in right Ascension in Time; if the Planet is progressive in right Ascension, or the Sum if it is retrograde, which call X; then say, by the Rule of Proportion;

As  $24^h \mp X : T :: X : e$  and  $T \pm$  will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the ☉ and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to  $24^h$ . and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1 1767.

The Sun's right Ascension in Time July 1st is,  $6^h. 40'. 25''$ . and July 2d,  $6^h. 44'. 33''$ . by the Ephemeris. Therefore his daily Motion in right Ascension is  $4'. 8''$ . The Moon's right Ascension July 1st at Noon by the Ephemeris, is  $159^\circ. 2'$ . answering to  $10^h. 36'. 8''$ . of Time, and July 2d is,  $169^\circ. 39'$ . an-  
swering

swering to  $10^h. 18'. 36''$ . The Difference is,  $42'. 28''$ . of Time, from which  $4'. 8''$ . being subtracted leaves  $38'. 20''$ . Subtract  $6^h. 40'. 25''$ . the Sun's right Ascension July 1st, at Noon from  $10^h. 36'. 8''$ , the Moon's right Ascension the same Noon, the Remainder  $3^h. 55'. 43''$ . is the Approximate Time of the Moon's passing the Meridian. The proportional Part of  $38'. 20''$  answering to this, is  $6'. 17''$  and the proportional Part of  $6'. 17''$ . is  $9''$ ; therefore  $6'. 17''$  and  $9''$  or  $6'. 26''$  added to  $3^h. 55'. 43''$  give  $4^h. 2'. 9''$ , the apparent Time of the Moon's passing the Meridian. In the Ephemeris it is  $4^h. 2'$ . It may also be computed by taking the Difference of the Moon's right Ascensions at Noon and Midnight, but then half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: And if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planet's, it will be sufficient to take the first proportional Part only.

The Configurations of Jupiter's Satellites, Page 5, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark  $\odot$ , and the Satellites by Points with Figures annexed, the Figure 1 signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right Hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher  $\circ$  sometimes annexed to the Figure of the Satellite towards the Margin, signifies that it is invisible on the Face of Jupiter; and the black Mark  $\bullet$ , signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter, and eclipsed by his Body.

The 7th and 5 following Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motions,



tions, and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitudes, Latitudes, and Declinations of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, horizontal Parallax, with its logistic or proportional Logarithm, are computed twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at 16<sup>h</sup>. 22' 16". First to find the Longitude. The Moon's Longitude, July 16, at 12<sup>h</sup>. is 0°. 6'. 40". 25". and July 17 at Noon, 0°. 13'. 47". 48". the Difference 7°. 7'. 23". is the Moon's Motion in 12 Hours; say then, by the Rule of Proportion,

As 12<sup>h</sup>. is to 4<sup>h</sup>. 22'. 16". (the Excess of 16<sup>h</sup>. 22'. 16". above 12<sup>h</sup>.) so is 7°. 7'. 23". to 2°. 35'. 41". which added to 0°. 6'. 40". 25". the Moon's Longitude at 12<sup>h</sup>. gives 0°. 9'. 16'. 6", the Moon's Longitude nearly; but this must be corrected on Account of the Moon's unequal Motion in 12 Hours, by Page 11 of requisite Tables; for this Purpose take out of the Ephemeris the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows.

|               |                 | 1st Diff.  | 2d. Diff. |
|---------------|-----------------|------------|-----------|
|               | °   '   "       | °   '   "  | °   '   " |
| July 16, Noon | 11. 29. 29. 34. | 7. 10. 51. | '   "     |
| Midnight      | 0. 6. 40. 58.   | 7. 7. 23.  | 3. 28.    |
| 17, Noon      | 0. 13. 47. 24.  | 7. 3. 39.  | 3. 44.    |
| Midnight      | 0. 20. 51. 27.  |            |           |

Take their Differences, 7°. 10'. 51". 7°. 7'. 23". 7°. 3'. 39". take the Differences of these Differences, or the 2d Differences, 3'. 28". 3'. 44". and take their Mean which is 3'. 36". Now look for the Correction in Page 11 of requisite Tables answering to 4<sup>h</sup>. 22' after Midnight, found on the Side, and 3' 36" at Top, 21" will be found under 3'. and 28" under 4'. the the Difference is 7". whence 36" will require 4", and the Correction sought is 21" + 4" = 25". which, according to the Remark at the Bottom of the Table, must be added (because

cause the Motion in 12 Hours or first Differences are decreasing to  $0^{\circ} 9^{\circ} 16' 6''$ . the Moon's Longitude found by even Proportion; whence the Moon's true Longitude is  $0^{\circ} 9^{\circ} 16' 31''$ . and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, vice versa, first decrease and then increase, take half the Difference of the Two second Differences for the Mean second Difference, with which take the Correction from Page 11, and add or subtract it as the 1st. first Difference is greater or less than the third first Difference.

To find the Moon's Latitude. Take out of the Ephemeris the Two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table Page 11 with the Hour from Noon or Midnight on the Side, and the mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Differences are decreasing or increasing; or, more generally, according as 1st first Difference is greater or less than third first Difference, gives the proportional Part corrected; which now added to or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 16<sup>h</sup>. 22', 16''.

|               | D's Lat. by<br>the Ephem.   | 1st Dif.                    | 2d Dif.                     | Mean of<br>2d Dif.          |
|---------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|               | $^{\circ} \quad ' \quad ''$ | $^{\circ} \quad ' \quad ''$ | $^{\circ} \quad ' \quad ''$ | $^{\circ} \quad ' \quad ''$ |
| July 16. Noon | 4 31 10 N.                  | 18 26                       | 4 36                        | 4 40                        |
| Midnight      | 4 49 36                     | 13 50                       | 4 44                        |                             |
| 17 Noon       | 5 3 26                      | 9 6                         |                             |                             |
| Midnight      | 5 12 32                     |                             |                             |                             |

The Moon's Latitude July 16 at Midnight being  $4^{\circ} 49' 36''$ . N. and the Motion in the next 12 Hours being  $13' 50''$ . say by Proportion;

As  $12^h$ . is to  $4^h. 22'. 16''$ . so is  $13'. 50''$ . to  $5'. 2''$ ; but this must be corrected by adding  $33''$ . the Correction from Page 11, answering to the Hour  $4^h. 22'$ . and the Mean Second Difference  $4' 40''$ , because the first Differences are decreasing, or rather because the first of them  $18'. 26''$ . is greater than the last of them  $9'. 6''$ . therefore the proportional Part corrected is  $5'. 2'' + 33'' = 5'. 35''$ , which added to  $4^{\circ} 49'. 36''$ . gives  $4^{\circ} 55' 11''$ . N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the Ephemeris for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or vice versa, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Correction from Table Page 11, answering to the Mean of the Two second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraical Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign—if the Latitudes decrease; and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences



ferences standing on each Side of the Interval to be interpolated, is to be accounted the mean second Difference; the Correction corresponding to it by Table Page 11, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the Four given Latitudes change their Denomination, call the second Latitude  $+$ , and those of a contrary Denomination  $-$ .

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed  $2\frac{1}{2}'$ , this may be neglected on most Occasions: but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page 7, and 8, *viz.* the Moon's right Ascension, her Semidiameter, horizontal Parallax, with its Logarithm, and the Distances contained in the Four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour, may be found very readily by the Help of the Table of proportional Logarithms at the End of the requisite Tables: For which consult the Explanation of those Tables.

The Moon's Longitude and Latitude are used in computing her Distances from the Sun and Stars contained in the Four last Pages of the Month, as well as in the Appulses to Stars pointed out in Page 1, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixed Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an Eclipse of the Sun, or an Occultation of a Star or Planet by the Moon observed: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the Ephemeris shews the Error of the Tables, whatever it be at that Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The logistic Logarithms of the Moon's Parallax, serve further to facilitate the Calculations of Parallaxes, but if the Table of proportional Logarithms at the End of the requisite Tables be made use,

of, which will be most convenient; the constant Quantity 0.4771 must be added to the logistic Logarithms of the Moon's horizontal Parallax contained in the Ephemeris of 1767, to reduce them to proportional Logarithms. It will be more convenient to substitute proportional Logarithms of the Moon's Parallax instead of the logistic Logarithms in a future Ephemeris.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her Distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy not being required for the Calculations of Refraction and Parallax. See British Mariner's Guide. Page 57. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper or lower Limb observed at Sea. See British Mariner's Guide, Page 93. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, though no Altitude of the Sun or a Star was taken for regulating the Time. See British Mariner's Guide, Page 61.

The Distances of the Moon from the Sun and fixed Stars, contained in the Four last Pages of the Month, are set down to every Three Hours of Apparent Time by the Meridian of Greenwich, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the same Distances observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is a Remark not unworthy our Notice, that there is Room to hope, by future Improvements of the lunar Tables, and the Introduction of a more accurate Method of constructing Instruments, it may be carried to a much higher Degree of Perfection.

The Moon's Distance are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun

are computed between  $40^{\circ}$  and  $120^{\circ}$  of Distance. While the Moon is between the Distances of  $20^{\circ}$  and  $40^{\circ}$  from the Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of  $40^{\circ}$  and  $90^{\circ}$  from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above  $90^{\circ}$  from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from  $90^{\circ}$  to  $120^{\circ}$ . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the Help of the Ephemeris, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between  $90$  and  $120^{\circ}$  Distance from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural tendency to correct each other; for that small Error which arises from the lunar Tables will affect the Result from either Star equally. But the Error of Mr. Mayer's last lunar Tables here made use of, scarce ever exceeding  $1'$  at the most, and seldom amounting to  $20''$ . the Uncertainty hence arising in the Determination of the Longitude can scarcely exceed half a Degree, and generally will not exceed 10 Miles.

The Distances set down in the Ephemeris, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the Ephemeris, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of Greenwich; and direct his Sight to the East or West of the Moon, according as the Distance at Greenwich is found in Page 9 and



re, or in Two last Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at Greenwich is estimated nearly by turning the supposed Longitude from Greenwich into Time, by Table Page 6, 7, and 8, and adding it to or subtracting it from the Apparent Time at the Ship, as its Longitude is West or East of Greenwich. It will be sufficient if the Distance be computed from the Ephemeris within 10'. or 20'. for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixed Stars; namely, in determining the Longitude by Comparison with the corresponding Distances observed at Sea, will be shewn hereafter in its proper Order, in the Dissertation explaining the Method of computing the Longitude at Sea by the Help of the Ephemeris.

The Distances contained in the Ephemeris were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method shewn for computing the Moon's Latitude, Page 17—19: Except that the Correction of second Differences at the Middle of the Interval to be interpolated, was taken  $\frac{1}{4}$  of the Mean of the Two second Differences, and at the first and third Quarter of the Interval was taken  $\frac{3}{4}$  of the Correction just found at the Middle of the Interval; instead of consulting Table Page 11, which would however have given the same Result. But, at the first 12 Hours when the Distances of the Moon from a Star begin, and the last 12 Hours when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir Isaac Newton's Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. Phil. Nat. Princ. Math. Page 486. Edit. ult.

From Four Distances at Noon and Midnight computed strictly, to interpolate Three Distances at the 3d, 6th, and 9th Hour of the first or last Interval.

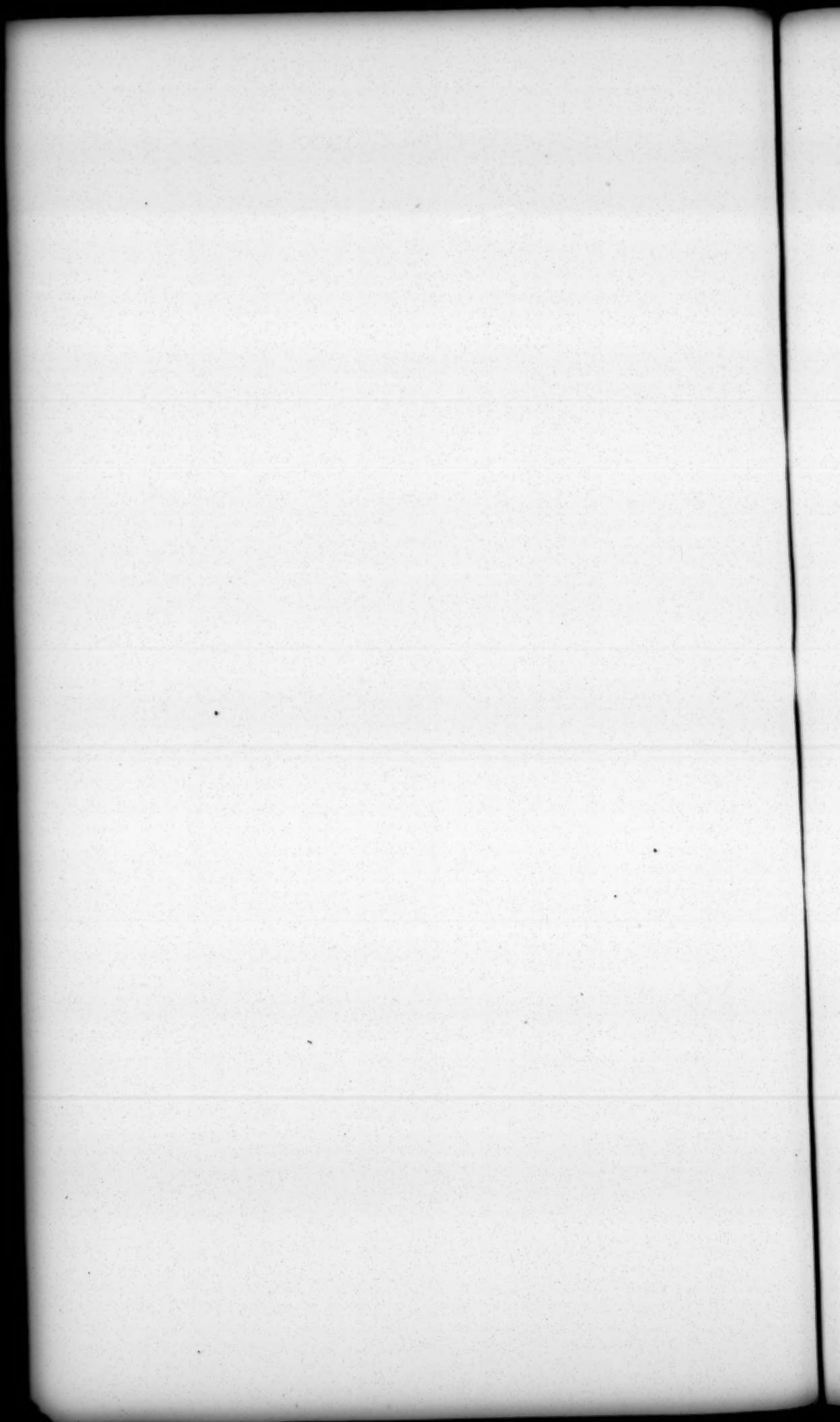
Subtract

Subtract each Distance from the following, for the first Differences, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following one of the same Order, for the second Differences: And in like Manner subtract the first 2d Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by  $b$ , the first or last second Difference by  $c$ ; according as the Interpolation to be made is for the first or last 12 Hours, denote also the third Difference by  $d$ ; and,  $a$  being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:

|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| At 3d Hour of first Interval  | $a + \frac{1}{4}b - \frac{3}{32}c + \frac{1}{128}d$ |
| At 6th Hour of first Interval | $a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$   |
| At 9th Hour of first Interval | $a + \frac{3}{4}b - \frac{3}{8}c + \frac{1}{8}d$    |
| Or                            |                                                     |
| At 3d Hour of last Interval   | $a + \frac{1}{4}b - \frac{3}{32}c - \frac{1}{128}d$ |
| At 6th Hour of last Interval  | $a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$   |
| At 9th Hour of last Interval  | $a + \frac{3}{4}b - \frac{3}{8}c - \frac{1}{8}d$    |

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if  $b$ ,  $c$  or  $d$  is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a Mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or 6th Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of  $\frac{1}{128}$  third Difference; which will be corrected, by applying  $+\frac{1}{128}d$  or third Difference, to Number found at the first Quarter of the Interval, and  $-\frac{1}{128}d$  to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.





One thousand Two hundred and Twenty  
LONGITUDES and LATITUDES  
of the MOON.

DEDUCED FROM

DR. BRADLEY'S OBSERVATIONS.

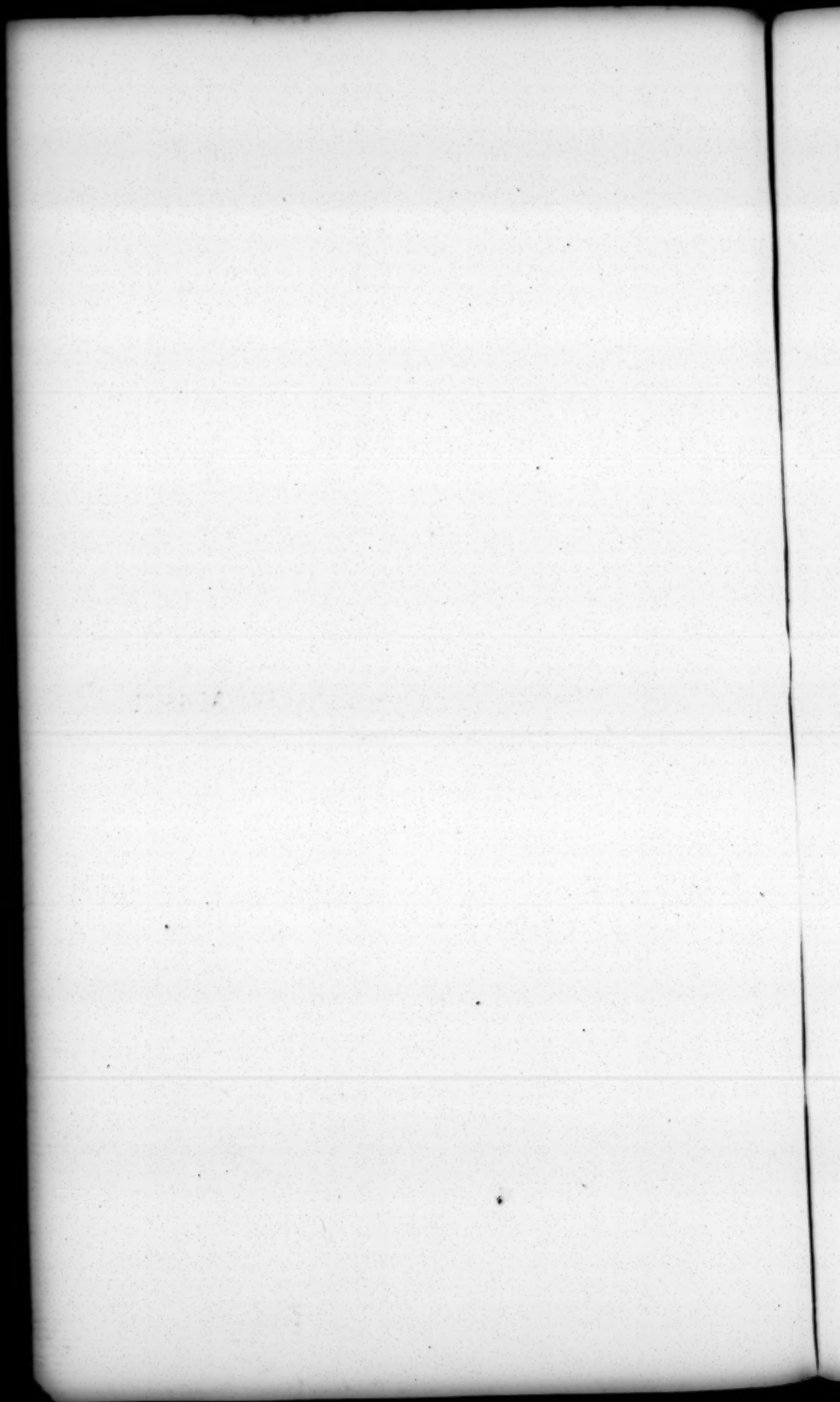
MADE BETWEEN

SEPTEMBER 13<sup>th</sup>, 1750, and NOVEMBER  
2<sup>d</sup>, 1760,

A N D

Compared with a Set of Manuscript Tables.

[A]



|              | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|--------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1750         | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Sept.        | 13 9. 58. 5                             | 10. 21. 29. 43                    | 4. 4. 22 N                       | — 43                         | — 21                        |
|              | 17 13. 35. 35                           | 0. 23. 55. 12                     | 4. 27. 14 N                      | + 10                         | — 17                        |
|              | 19 15. 32. 10                           | 1. 24. 41. 51                     | 2. 38. 25 N                      | + 1                          | + 4                         |
|              | 23 19. 19. 2                            | 3. 21. 6. 38                      | 2. 7. 0 S                        | — 18                         | + 2                         |
|              | 24 20. 8. 15                            | 4. 4. 14. 20                      | 3. 5. 55 S                       | — 11                         | — 1                         |
| Oct.         | 10 7. 44. 21                            | 10. 14. 19. 1                     | 3. 52. 45 N                      | — 10                         | — 25                        |
|              | 12 9. 27. 17                            | 11. 14. 4. 5                      | 4. 58. 49 N                      | — 55                         | — 23                        |
|              | 13 10. 20. 11                           | 11. 29. 38. 31                    | 5. 2. 7 N                        | — 60                         | — 21                        |
|              | 14 11. 15. 9                            | 0. 15. 30. 14                     | 4. 42. 30 N                      | — 43                         | — 11                        |
|              | 15 12. 15. 8                            | 1. 1. 28. 53                      | 4. 0. 31 N                       | — 9                          | + 8                         |
|              | 17 14. 16. 58                           | 2. 2. 49. 27                      | 1. 48. 6 N                       | + 14                         | + 19                        |
| Nov.         | 4 3. 56. 22                             | 9. 12. 13. 47                     | 1. 45. 41 N                      | — 4                          | — 24                        |
|              | 5 4. 47. 2                              | 9. 25. 22. 37                     | 2. 49. 42 N                      | + 3                          | — 33                        |
|              | 6 5. 36. 56                             | 10. 8. 52. 40                     | 3. 46. 3 N                       | + 3                          | — 36                        |
|              | 7 6. 26. 16                             | 10. 22. 47. 22                    | 4. 31. 5 N                       | — 4                          | — 32                        |
|              | 9 8. 5. 51                              | 11. 21. 58. 49                    | 5. 11. 40 N                      | — 24                         | — 22                        |
|              | 12 10. 51. 19                           | 1. 8. 38. 28                      | 3. 35. 20 N                      | — 38                         | + 5                         |
|              | 14 12. 58. 14                           | 2. 10. 3. 15                      | 1. 5. 10 N                       | — 5                          | + 11                        |
|              | 19 17. 32. 34                           | 4. 21. 2. 42                      | 4. 30. 5 S                       | + 11                         | — 17                        |
| Dec.         | 2 2. 44. 20                             | 9. 21. 21. 40                     | 2. 36. 40 N                      | — 33                         | — 36                        |
|              | 6 5. 59. 25                             | 11. 16. 27. 59                    | 5. 16. 6 N                       | — 15                         | — 35                        |
|              | 8 7. 40. 12                             | 0. 15. 54. 3                      | 4. 49. 59 N                      | + 5                          | — 16                        |
|              | 9 8. 34. 48                             | 1. 1. 3. 31                       | 4. 6. 12 N                       | — 22                         | — 7                         |
|              | 10 9. 32. 56                            | 1. 16. 24. 25                     | 3. 4. 28 N                       | — 16                         | — 2                         |
|              | 11 10. 34. 6                            | 2. 1. 49. 22                      | 1. 49. 1 N                       | — 1                          | + 6                         |
|              | 12 11. 37. 54                           | 2. 17. 9. 51                      | 0. 26. 47 N                      | — 6                          | — 21                        |
|              | 18 16. 53. 27                           | 5. 11. 17. 41                     | 5. 11. 58 S                      | + 25                         | — 8                         |
|              | 21 18. 59. 11                           | 6. 18. 31. 8                      | 4. 43. 37 S                      | + 23                         | — 11                        |
|              | 22 19. 42. 31                           | 7. 0. 42. 30                      | 4. 6. 57 S                       | + 28                         | + 6                         |
|              |                                         |                                   |                                  |                              |                             |
| 1751<br>Jan. | 7 8. 20. 20                             | 1. 25. 20. 30                     | 2. 20. 5 S                       | + 26                         | — 10                        |
|              | 8 9. 20. 24                             | 2. 10. 13. 58                     | 1. 2. 47 N                       | + 11                         | — 3                         |
|              | 9 10. 21. 3                             | 2. 25. 3. 39                      | 0. 18. 15 S                      | + 3                          | + 5                         |
|              | 11 12. 17. 40                           | 3. 24. 9. 30                      | 2. 47. 51 S                      | + 5                          | + 35                        |
|              | 17 16. 53. 54                           | 6. 13. 25. 20                     | 4. 48. 24 S                      | + 12                         | + 6                         |
|              | 18 17. 36. 52                           | 6. 25. 41. 23                     | 4. 16. 48 S                      | + 23                         | — 5                         |



|      | Days,<br>N. S. | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------|----------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1751 |                | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Feb. | 6              | 9. 9. 57                                | 3. 4. 4. 17                       | 1. 13. 29 S                      | + 17                         | - 11                        |
|      | 7              | 10. 5. 58                               | 3. 18. 14. 13                     | 2. 23. 7 S                       | + 9                          | + 15                        |
|      | 9              | 11. 48. 39                              | 4. 15. 55. 30                     | 4. 11. 42 S                      | - 19                         | + 4                         |
|      | 10             | 12. 37. 38                              | 4. 29. 24. 18                     | 4. 44. 5 S                       | - 22                         | + 16                        |
|      | 15             | 16. 15. 7                               | 7. 2. 49. 22                      | 3. 39. 39 S                      | + 22                         | + 14                        |
|      | 19             | 19. 27. 27                              | 8. 22. 7. 48                      | 0. 16. 55 N                      | + 1                          | - 1                         |
|      | 20             | 20. 19. 7                               | 9. 4. 59. 38                      | 1. 24. 16 N                      | + 3                          | - 11                        |
| Mar. | 5              | 7. 5. 9                                 | 2. 29. 44. 44                     | 1. 3. 27 S                       | - 10                         | + 2                         |
|      | 8              | 9. 43. 45                               | 4. 11. 5. 45                      | 4. 2. 23 S                       | - 25                         | + 7                         |
|      | 15             | 14. 55. 14                              | 7. 10. 16. 15                     | 2. 56. 36 S                      | + 7                          | + 5                         |
|      | 19             | 18. 9. 10                               | 8. 29. 28. 7                      | 1. 11. 19 N                      | - 28                         | + 1                         |
|      | 20             | 18. 59. 50                              | 9. 12. 15. 48                     | 2. 15. 19 N                      | - 27                         | - 29                        |
|      | 31             | 3. 58. 46                               | 2. 10. 19. 7                      | 0. 23. 51 N                      | + 4                          | - 6                         |
| Apr. | 2              | 5. 56. 34                               | 3. 9. 27. 17                      | 2. 6. 55 S                       | - 5                          | + 51                        |
|      | 3              | 6. 50. 51                               | 3. 23. 25. 29                     | 3. 11. 6 S                       | - 29                         | + 3                         |
|      | 6              | 9. 13. 49                               | 5. 3. 21. 55                      | 4. 59. 10 S                      | - 23                         | - 8                         |
|      | 9              | 11. 22. 6                               | 6. 11. 18. 25                     | 4. 31. 32 S                      | - 24                         | + 12                        |
|      | 10             | 12. 6. 21                               | 6. 23. 40. 40                     | 3. 55. 8 S                       | - 17                         | - 7                         |
|      | 11             | 12. 51. 48                              | 7. 5. 57. 5                       | 3. 7. 58 S                       | - 7                          | - 1                         |
|      | 20             | 20. 9. 5                                | 11. 0. 46. 4                      | 5. 2. 20 N                       | + 55                         | - 12                        |
| May  | 2              | 6. 26. 16                               | 4. 16. 4. 26                      | 4. 39. 10 S                      | - 4                          | - 7                         |
|      | 3              | 7. 12. 21                               | 4. 29. 18. 47                     | 5. 4. 26 S                       | - 8                          | - 15                        |
|      | 4              | 7. 56. 11                               | 5. 12. 13. 32                     | 5. 13. 5 S                       | - 5                          | - 9                         |
|      | 5              | 8. 38. 45                               | 5. 24. 52. 56                     | 5. 6. 35 S                       | - 6                          | - 2                         |
|      | 14             | 15. 39. 0                               | 9. 15. 51. 39                     | 2. 53. 21 N                      | - 43                         | - 2                         |
|      | 16             | 17. 14. 42                              | 10. 11. 46. 1                     | 4. 31. 40 N                      | - 38                         | - 5                         |
|      | 17             | 18. 2. 3                                | 10. 25. 13. 40                    | 5. 2. 0 N                        | - 43                         | - 4                         |
|      | 19             | 19. 38. 29                              | 11. 23. 27. 17                    | 5. 11. 1 N                       | - 68                         | + 4                         |
|      | 20             | 20. 29. 27                              | 0. 8. 16. 6                       | 4. 45. 38 N                      | - 80                         | + 13                        |
|      | 30             | 5. 7. 35                                | 4. 24. 22. 37                     | 5. 1. 51 S                       | + 39                         | - 9                         |
|      | 31             | 5. 53. 11                               | 5. 7. 41. 22                      | 5. 16. 36 S                      | + 21                         | - 6                         |
| June | 1              | 6. 36. 46                               | 5. 20. 36. 38                     | 5. 14. 43 S                      | + 23                         | + 6                         |
|      | 4              | 8. 45. 22                               | 6. 27. 52. 58                     | 3. 44. 8 S                       | + 17                         | + 6                         |
|      | 6              | 10. 16. 30                              | 7. 22. 15. 33                     | 1. 51. 1 S                       | + 8                          | + 10                        |
|      | 12             | 15. 12. 36                              | 10. 7. 40. 38                     | 4. 19. 56 N                      | - 40                         | - 6                         |

|       | Days, N.S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1751  |            | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| June  | 13         | 15. 59. 40                        | 10. 20. 55. 46          | 4. 54. 30 N            | — 46                   | + 12                  |
|       | 14         | 16. 46. 22                        | 11. 4. 28. 1            | 5. 13. 26 N            | — 43                   | + 12                  |
|       | 15         | 17. 33. 28                        | 11. 18. 19. 46          | 5. 15. 8 N             | — 37                   | + 9                   |
|       | 17         | 19. 12. 50                        | 0. 17. 7. 46            | 4. 21. 6 N             | — 47                   | + 16                  |
|       | 18         | 20. 7. 3                          | 1. 2. 4. 5              | 3. 25. 39 N            | — 42                   | — 14                  |
|       | 28         | 4. 31. 37                         | 5. 15. 25. 20           | 5. 14. 48 S            | + 41                   | — 12                  |
| July  | 4          | 8. 59. 40                         | 8. 0. 6. 33             | 1. 7. 22 S             | + 17                   | + 2                   |
|       | 5          | 9. 48. 36                         | 8. 12. 24. 35           | 0. 0. 21 S             | + 29                   | + 15                  |
|       | 6          | 10. 38. 34                        | 8. 24. 51. 20           | 1. 7. 20 N             | + 20                   | — 22                  |
|       | 8          | 12. 20. 54                        | 9. 20. 22. 1            | 3. 12. 8 N             | + 4                    | — 11                  |
|       | 17         | 19. 53. 33                        | 1. 26. 28. 50           | 1. 23. 4 N             | — 29                   | + 8                   |
|       | 19         | 21. 55. 39                        | 2. 16. 41. 15           | 1. 19. 39 S            | — 42                   | in A.R.               |
| Aug.  | 27         | 3. 52. 58                         | 6. 5. 46. 57            | 4. 39. 43 S            | + 48                   | 0                     |
|       | 3          | 9. 21. 20                         | 9. 2. 29. 41            | 1. 52. 0 N             | + 7                    | — 24                  |
|       | 5          | 11. 1. 22                         | 9. 28. 23. 55           | 3. 44. 53 N            | + 11                   | — 3                   |
|       | 8          | 13. 28. 59                        | 11. 9. 29. 23           | 5. 2. 59 N             | — 8                    | + 8                   |
|       | 11         | 15. 57. 52                        | 0. 22. 32. 43           | 3. 43. 51 N            | — 25                   | + 8                   |
|       | 13         | 17. 47. 48                        | 1. 21. 48. 12           | 1. 34. 56 N            | — 25                   | — 6                   |
|       | 14         | 18. 46. 20                        | 2. 6. 30. 50            | 0. 18. 5 N             | — 36                   | — 5                   |
|       | 26         | 4. 0. 27                          | 1. 8. 7. 51             | 2. 32. 33 S            | + 63                   | + 52                  |
|       | 30         | 7. 12. 24                         | 8. 27. 11. 10           | 1. 37. 23 N            | + 4                    | + 4                   |
| Sept. | 2          | 9. 41. 7                          | 10. 5. 54. 38           | + 15. 7 N              | — 9                    | — 20                  |
|       | 3          | 10. 30. 3                         | 10. 19. 33. 5           | 4. 45. 36 N            | — 7                    | — 15                  |
|       | 5          | 12. 9. 10                         | 11. 17. 57. 48          | 4. 55. 50 N            | + 7                    | — 7                   |
|       | 6          | 13. 0. 30                         | 0. 2. 37. 23            | 4. 32. 20 N            | + 2                    | + 4                   |
|       | 7          | 13. 52. 26                        | 0. 17. 27. 9            | 3. 50. 26 N            | + 1                    | + 4                   |
|       | 8          | 14. 46. 35                        | 1. 2. 21. 59            | 2. 52. 30 N            | — 14                   | + 5                   |
|       | 13         | 19. 36. 34                        | 3. 15. 48. 51           | 3. 9. 44 S             | — 27                   | + 14                  |
|       | 14         | 20. 30. 40                        | 4. 0. 1. 40             | 4. 2. 36 S             | — 14                   | — 60                  |
|       | 29         | 7. 30. 36                         | 9. 29. 49. 42           | 4. 8. 44 N             | — 7                    | — 5                   |
| Oct.  | 1          | 9. 7. 10                          | 10. 26. 47. 19          | 5. 2. 39 N             | — 32                   | — 13                  |
|       | 2          | 9. 56. 2                          | 11. 10. 57. 59          | 5. 4. 28 N             | — 39                   | — 8                   |
|       | 3          | 10. 46. 6                         | 11. 25. 35. 41          | 4. 45. 59 N            | — 41                   | — 14                  |
|       | 7          | 14. 32. 22                        | 1. 26. 38. 36           | 0. 43. 20 N            | — 30                   | + 5                   |
|       | 10         | 17. 32. 10                        | 3. 11. 28. 22           | 3. 5. 29 S             | — 27                   | — 3                   |

|              | Days, N. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|--------------|----------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1751         | S.       | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Oct.         | 11       | 18. 27. 21                        | 3. 25. 48. 29           | 4. 0. 55 S             | — 34                   | + 4                   |
|              | 13       | 20. 7. 46                         | 4. 23. 31. 41           | 5. 3. 17 S             | + 14                   | + 14                  |
|              | 14       | 20. 54. 7                         | 5. 6. 58. 20            | 5. 8. 44 S             | + 14                   | + 18                  |
|              | 24       | 3. 47. 2                          | 8. 9. 29. 54            | 2. 16. 58 N            | + 4                    | — 16                  |
|              | 25       | 4. 35. 53                         | 9. 12. 0. 36            | 3. 14. 11 N            | + 3                    | — 21                  |
|              | 26       | 5. 22. 47                         | 9. 24. 29. 46           | 4. 3. 3 N              | + 2                    | — 19                  |
|              | 28       | 6. 57. 50                         | 10. 20. 24. 33          | 5. 5. 35 N             | — 5                    | — 8                   |
|              | 29       | 7. 45. 8                          | 11. 4. 0. 11            | 5. 14. 28 N            | — 29                   | — 27                  |
|              | 30       | 8. 32. 7                          | 11. 18. 5. 55           | 5. 4. 53 N             | — 36                   | — 22                  |
|              | 31       | 9. 22. 20                         | 0. 2. 42. 42            | 4. 35. 38 N            | — 46                   | — 13                  |
| Nov.         | 1        | 10. 15. 23                        | 0. 17. 48. 15           | 3. 46. 36 N            | — 49                   | — 7                   |
|              | 2        | 11. 11. 55                        | 1. 3. 16. 49            | 2. 39. 29 N            | — 26                   | + 27                  |
|              | 3        | 12. 14. 24                        | 1. 19. 1. 34            | 1. 19. 49 N            | — 23                   | + 14                  |
|              | 7        | 16. 20. 29                        | 3. 20. 44. 54           | 3. 51. 52 S            | — 18                   | — 7                   |
|              | 8        | 17. 14. 49                        | 4. 5. 14. 20            | 4. 38. 29 S            | — 12                   | — 13                  |
|              | 9        | 18. 5. 18                         | 4. 19. 16. 50           | 5. 6. 47 S             | — 8                    | — 14                  |
|              | 10       | 18. 52. 39                        | 5. 2. 54. 6             | 5. 16. 41 S            | + 17                   | — 13                  |
|              | 12       | 20. 21. 52                        | 5. 29. 7. 34            | 4. 47. 5 S             | + 6                    | — 64                  |
|              | 13       | 21. 5. 34                         | 6. 11. 49. 56::         | 4. 9. 58 S             | + 26                   | — 41                  |
|              | 14       | 21. 49. 43                        | 6. 24. 21. 28::         | 3. 21. 55 S            | + 4                    | — 57                  |
|              | 27       | 7. 10. 4                          | 11. 25. 42. 11          | 4. 55. 7 N             | — 2                    | — 22                  |
|              | 28       | 7. 59. 49                         | 0. 10. 4. 55            | 4. 16. 15 N            | — 12                   | — 14                  |
|              | 30       | 9. 50. 8                          | 1. 10. 19. 10           | 2. 6. 3 N              | — 9                    | — 28                  |
| Dec          | 2        | 11. 56. 31                        | 2. 11. 58. 25           | 0. 46. 0 S             | — 12                   | + 8                   |
|              | 4        | 14. 4. 37                         | 3. 13. 33. 39           | 3. 24. 23 S            | + 13                   | — 18                  |
|              | 6        | 15. 57. 26                        | 4. 13. 37. 16           | 4. 58. 38 S            | + 14                   | — 27                  |
|              | 9        | 18. 19. 58                        | 9. 24. 52. 47           | 4. 56. 1 S             | + 20                   | — 27                  |
|              | 24       | 5. 5. 5                           | 11. 20. 34. 41          | 4. 59. 35 N            | + 3                    | — 8                   |
|              | 25       | 5. 52. 6                          | 0. 4. 18. 11            | 4. 29. 0 N             | + 18                   | — 18                  |
|              | 31       | 11. 40. 45                        | 3. 4. 52. 34::          | 2. 44. 4 S             | + 2                    | — 10                  |
| 1752<br>Jan. | 1        | 12. 43. 37                        | 3. 20. 35. 15           | 3. 49. 35 S            | + 13                   | — 10                  |
|              | 8        | 18. 29. 31                        | 6. 28. 23. 33           | 2. 55. 7 S             | + 10                   | 0                     |
|              | 20       | 3. 4. 9                           | 11. 16. 29. 45          | 4. 55. 3 N             | + 23                   | + 2                   |
|              | 23       | 5. 28. 33                         | 0. 27. 52. 48           | 2. 29. 21 N            | + 29                   | + 4                   |
|              | 26       | 8. 18. 52                         | 2. 11. 53. 57           | 0. 55. 26 S            | + 32                   | + 2                   |
|              | 27       | 9. 20. 21                         | 2. 27. 7. 34            | 2. 12. 13 S            | + 14                   | + 9                   |



|      | Days,<br>N. S. | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------|----------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1752 |                | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Jan. | 28             | 10. 21. 35                              | 3. 12. 29. 45                     | 3. 20. 10 S                      | - 3                          | + 2                         |
|      | 29             | 11. 20. 55                              | 3. 27. 51. 45                     | 4. 13. 24 S                      | + 7                          | c                           |
| Feb. | 1              | 14. 2. 17                               | 5. 12. 28. 30                     | 4. 55. 50 S                      | - 4                          | + 9                         |
|      | 9              | 20. 19. 48                              | 8. 24. 51. 17                     | 2. 6. 22 N                       | + 10                         | + 25                        |
|      | 22             | 6. 11. 33                               | 2. 6. 54. 59                      | 0. 44. 41 S                      | + 7                          | - 16                        |
|      | 23             | 7. 10. 43                               | 2. 21. 38. 10                     | 1. 59. 6 S                       | + 5                          | + 3                         |
|      | 25             | 9. 8. 5                                 | 3. 21. 20. 38                     | 4. 1. 8 S                        | + 9                          | + 4                         |
|      | 26             | 10. 3. 57                               | 4. 6. 12. 22                      | 4. 39. 24 S                      | - 11                         | + 4                         |
|      | 27             | 10. 57. 13                              | 4. 20. 56. 53                     | 4. 58. 42 S                      | - 17                         | + 5                         |
|      | 28             | 11. 48. 3                               | 5. 5. 28. 23                      | 4. 58. 12 S                      | - 20                         | + 12                        |
| Mar. | 1              | 13. 26. 49                              | 6. 3. 34. 24                      | 4. 3. 44 S                       | + 1                          | + 16                        |
|      | 2              | 14. 13. 51                              | 6. 17. 2. 24                      | 3. 15. 38 S                      | + 13                         | + 10                        |
|      | 4              | 15. 48. 5                               | 7. 12. 52. 41                     | 1. 14. 52 S                      | + 6                          | + 11                        |
|      | 6              | 17. 23. 56                              | 8. 7. 39. 24                      | 0. 56. 0 N                       | - 9                          | - 5                         |
|      | 7              | 18. 12. 18                              | 8. 19. 51. 58                     | 1. 58. 20 N                      | - 23                         | - 9                         |
|      | 9              | 19. 48. 32                              | 9. 14. 24. 50                     | 3. 44. 20 N                      | + 1                          | + 9                         |
|      | 11             | 21. 22. 51                              | 10. 9. 43. 59                     | 4. 51. 15 N                      | - 10                         | - 35                        |
|      | 19             | 3. 9. 3                                 | 1. 17. 45. 44                     | 0. 43. 18 N                      | + 5                          | + 9                         |
|      | 23             | 7. 2. 22                                | 3. 16. 37. 17                     | 3. 58. 26 S                      | + 4                          | + 7                         |
|      | 24             | 7. 57. 38                               | 4. 1. 10. 20                      | 4. 39. 35 S                      | + 10                         | + 3                         |
|      | 25             | 8. 50. 20                               | 4. 15. 35. 33                     | 5. 2. 40 S                       | + 3                          | - 6                         |
|      | 27             | 10. 29. 12                              | 5. 13. 52. 59                     | 4. 51. 44 S                      | + 4                          | + 6                         |
|      | 28             | 11. 16. 35                              | 5. 27. 40. 47                     | 4. 20. 15 S                      | - 5                          | + 1                         |
|      | 29             | 12. 4. 32                               | 6. 11. 12. 33                     | 3. 34. 19 S                      | - 25                         | + 10                        |
|      | 30             | 12. 52. 32                              | 6. 24. 26. 59                     | 2. 37. 46 S                      | - 8                          | + 11                        |
|      | 31             | 13. 39. 53                              | 7. 7. 23. 31                      | 1. 34. 17 S                      | + 3                          | - 8                         |
| Apr. | 2              | 15. 16. 8                               | 8. 2. 32. 00                      | 0. 40. 52 N                      | + 5                          | - 1                         |
|      | 5              | 17. 40. 53                              | 9. 9. 17. 26                      | 3. 57. 59 N                      | - 36                         | 0                           |
|      | 8              | 20. 0. 25                               | 10. 16. 54. 35                    | 5. 8. 55 N                       | - 41                         | + 12                        |
|      | 9              | 20. 46. 26                              | 11. 0. 2. 47                      | 5. 10. 39 N                      | - 27                         | + 14                        |
|      | 10             | 21. 33. 5                               | 11. 13. 35. 14                    | 5. 38. 14 N                      | - 24                         | + 15                        |
|      | 18             | 3. 58. 5                                | 2. 27. 8. 34                      | 2. 49. 42 S                      | + 24                         | + 9                         |
|      | 20             | 5. 53. 53                               | 3. 26. 49. 37                     | 4. 38. 55 S                      | + 9                          | - 5                         |
|      | 21             | 6. 47. 18                               | 4. 11. 16. 58                     | 5. 6. 40 S                       | + 23                         | - 3                         |
|      | 22             | 7. 37. 49                               | 4. 25. 27. 40                     | 5. 14. 54 S                      | - 4                          | + 9                         |
|      | 26             | 10. 45. 10                              | 6. 19. 31. 14                     | 3. 0. 55 S                       | + 14                         | + 6                         |

|      | Days. | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------|-------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1752 | S.    | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Apr. | 28    | 12. 21. 26                              | 7. 15. 9. 53                      | 0. 50. 54 S                      | + 10                         | + 7                         |
|      | 30    | 13. 58. 11                              | 8. 10. 4. 19                      | 1. 25. 58 N                      | + 10                         | - 10                        |
| May  | 5     | 17. 53. 29                              | 10. 11. 34. 32                    | 5. 9. 30 N                       | - 31                         | + 6                         |
|      | 6     | 18. 38. 28                              | 10. 24. 18. 21                    | 5. 17. 31 N                      | - 31                         | + 17                        |
|      | 7     | 19. 23. 41                              | 11. 7. 22. 25                     | 5. 9. 34 N                       | - 11                         | 0                           |
|      | 15    | 1. 43. 49                               | 2. 20. 33. 48::                   | 2. 20. 25:: S                    | + 51                         | + 2                         |
|      | 17    | 3. 45. 49                               | 3. 21. 26. 49                     | 4. 26. 59 S                      | + 4                          | - 23                        |
|      | 18    | 4. 42. 2                                | 4. 6. 25. 46                      | 5. 3. 9 S                        | + 30                         | - 63                        |
|      | 19    | 5. 34. 36                               | 4. 20. 59. 39                     | 5. 17. 16 S                      | + 44                         | - 17                        |
|      | 22    | 7. 57. 29                               | 6. 2. 18. 13                      | 4. 11. 4 S                       | + 39                         | - 7                         |
|      | 23    | 8. 43. 8                                | 6. 15. 23. 52                     | 3. 20. 35 S                      | + 42                         | + 9                         |
|      | 24    | 9. 29. 4                                | 6. 28. 14. 42                     | 2. 21. 1 S                       | + 33                         | - 27                        |
|      | 25    | 10. 15. 42                              | 7. 10. 53. 15                     | 1. 14. 45 S                      | + 29                         | + 3                         |
|      | 27    | 11. 52. 32                              | 8. 5. 44. 52                      | 1. 2. 10 N                       | + 26                         | - 13                        |
| June | 29    | 13. 30. 26                              | 9. 0. 16. 12                      | 3. 5. 28 N                       | + 11                         | - 11                        |
|      | 1     | 15. 49. 43                              | 10. 7. 4. 8                       | 5. 1. 36 N                       | + 3                          | - 7                         |
|      | 3     | 17. 18. 21                              | 11. 2. 14. 45                     | 5. 12. 33 N                      | - 30                         | + 2                         |
|      | 14    | 2. 29. 44                               | 3. 29. 50. 25::                   | 4. 45. 10 S                      | + 86                         | + 13                        |
|      | 15    | 3. 25. 54                               | 4. 15. 6. 34                      | 5. 9. 24 S                       | + 78                         | - 19                        |
|      | 16    | 4. 18. 21                               | 4. 29. 53. 58                     | 5. 11. 25 S                      | + 64                         | - 10                        |
|      | 18    | 5. 55. 13                               | 5. 27. 57. 27                     | 4. 19. 50 S                      | + 44                         | - 3                         |
|      | 19    | 6. 41. 28                               | 6. 11. 17. 53                     | 3. 32. 37 S                      | + 45                         | - 2                         |
|      | 22    | 9. 0. 44                                | 7. 19. 25. 58                     | 0. 25. 10 S                      | + 36                         | + 16                        |
|      | 23    | 9. 48. 28                               | 8. 1. 46. 5                       | 0. 41. 58 N                      | + 28                         | - 19                        |
|      | 25    | 11. 25. 2                               | 8. 26. 14. 39                     | 2. 45. 53 N                      | + 20                         | - 18                        |
|      | 29    | 14. 32. 33                              | 10. 15. 29. 7                     | 5. 5. 14 N                       | + 11                         | - 13                        |
| July | 2     | 16. 44. 54                              | 11. 23. 47. 51                    | 4. 25. 41 N                      | - 2                          | - 23                        |
|      | 5     | 19. 10. 53                              | 1. 4. 55. 38:                     | 1. 36. 20:: N                    | - 12                         | + 35                        |
|      | 20    | 7. 45. 24                               | 7. 27. 43. 40                     | 0. 28. 31 N                      | + 33                         | - 9                         |
|      | 22    | 9. 21. 42                               | 8. 22. 13. 2                      | 2. 32. 7 N                       | + 21                         | - 24                        |
|      | 23    | 10. 9. 43                               | 9. 4. 25. 50                      | 3. 24. 17 N                      | + 8                          | - 32                        |
|      | 26    | 12. 31. 3                               | 10. 11. 30. 32                    | 4. 56. 48 N                      | + 25                         | - 24                        |
|      | 27    | 13. 15. 57                              | 10. 24. 6. 1                      | 5. 0. 53 N                       | + 29                         | - 14                        |
|      | 28    | 13. 59. 46                              | 11. 6. 51. 4                      | 4. 50. 11 N                      | + 8                          | - 9                         |
|      | 29    | 14. 44. 4                               | 11. 19. 46. 39                    | 4. 24. 41 N                      | + 4                          | - 11                        |

|       | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1752  |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Aug.  | 4           | 19. 52. 46                        | 2. 13. 17. 42           | 1. 56. 20 S            | — 31                   | — 19                  |
|       | 16          | 5. 40. 15                         | 7. 23. 7. 46            | 0. 19. 7 N             | + 30                   | — 8                   |
|       | 19          | 8. 5. 6                           | 9. 0. 4. 21             | 3. 17. 6 N             | + 14                   | — 18                  |
|       | 23          | 11. 10. 39                        | 10. 19. 42. 17          | 5. 0. 51 N             | + 22                   | — 24                  |
|       | 25          | 12. 42. 21                        | 11. 15. 33. 22          | 4. 28. 1 N             | + 24                   | — 8                   |
|       | 28          | 15. 3. 20                         | 0. 25. 51. 34           | 1. 54. 20 N            | — 2                    | 0                     |
|       | 30          | 16. 48. 38                        | 1. 23. 51. 52           | 0. 31. 44 S            | — 12                   | — 16                  |
|       | 31          | 17. 45. 17                        | 2. 8. 15. 27            | 1. 46. 0 S             | — 19                   | — 7                   |
| Sept. | 1           | 18. 43. 47                        | 2. 22. 54. 47           | 2. 54. 50 S            | — 25                   | — 9                   |
|       | 2           | 19. 42. 56                        | 3. 7. 48. 31            | 3. 52. 43 S            | — 30                   | + 6                   |
|       | 12          | 3. 32. 3                          | 7. 17. 43. 41           | 0. 4. 12 N             | + 42                   | — 7                   |
|       | 16          | 6. 46. 25                         | 9. 7. 31. 15            | 3. 58. 13 N            | + 6                    | — 13                  |
|       | 17          | 7. 33. 23                         | 9. 19. 46. 41           | 4. 38. 8 N             | — 5                    | — 17                  |
|       | 19          | 9. 4. 54                          | 10. 14. 40. 10          | 5. 7. 2 N              | — 12                   | — 6                   |
|       | 22          | 11. 20. 47                        | 11. 23. 44. 22          | 4. 4. 27 N             | + 1                    | + 5                   |
|       | 24          | 12. 59. 3                         | 0. 21. 9. 30            | 2. 9. 52 N             | 0                      | + 19                  |
|       | 25          | 13. 50. 30                        | 1. 5. 13. 31            | 0. 57. 50 N            | — 17                   | + 6                   |
|       | 27          | 15. 40. 56                        | 2. 3. 55. 45            | 1. 36. 7 S             | — 33                   | — 31                  |
|       | 29          | 17. 37. 16½                       | 3. 3. 11. 4             | 3. 48. 35 S            | — 35                   | + 7                   |
|       | 30          | 18. 34. 49                        | 3. 17. 55. 35           | 4. 34. 45 S            | — 18                   | + 9                   |
| Oct.  | 12          | 3. 50. 33                         | 8. 20. 7. 54            | 2. 58. 57 N            | + 32                   | + 6                   |
|       | 13          | 4. 38. 56                         | 9. 2. 27. 47            | 3. 50. 23 N            | + 34                   | — 9                   |
|       | 16          | 6. 57. 41                         | 10. 9. 19. 0            | 5. 13. 20 N            | — 10                   | — 9                   |
|       | 17          | 7. 42. 20                         | 10. 21. 50. 49          | 5. 13. 14 N            | — 19                   | — 2                   |
|       | 18          | 8. 26. 55                         | 11. 4. 38. 5            | 4. 57. 55 N            | — 19                   | — 6                   |
|       | 20          | 9. 58. 39                         | 0. 1. 13. 1             | 3. 40. 18 N            | — 21                   | — 3                   |
|       | 21          | 10. 47. 15                        | 0. 15. 4. 5             | 2. 39. 53 N            | — 30                   | — 13                  |
|       | 23          | 12. 35. 13                        | 1. 13. 49. 30           | 0. 8. 25 N             | — 17                   | — 3                   |
|       | 24          | 13. 32. 26                        | 1. 28. 35. 59           | 1. 12. 50 S            | — 18                   | — 2                   |
|       | 25          | 14. 31. 37                        | 2. 13. 31. 42           | 2. 29. 46 S            | — 27                   | + 8                   |
|       | 27          | 16. 30. 9                         | 3. 13. 27. 37           | 4. 29. 10 S            | — 22                   | + 5                   |
|       | 28          | 17. 26. 51                        | 3. 28. 17. 46           | 5. 3. 9 S              | — 11                   | — 6                   |
|       | 29          | 18. 20. 58                        | 4. 12. 58. 4            | 5. 16. 45 S            | + 6                    | — 5                   |
|       | 30          | 19. 12. 38                        | 4. 27. 26. 20           | 5. 9. 56 S             | + 39                   | — 1                   |
|       | 31          | 20. 2. 24                         | 5. 11. 42. 2            | 4. 44. 11 S            | + 37                   | — 1                   |



|      | Days, N. S. | Mean Time of Transit of D's Limb.    | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|------|-------------|--------------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1752 |             | H. M. S.                             | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Nov. | 11          | 4. 6. 4                              | 9. 21.59.16             | 4.49.28: N             | + 44:                  | +1.51:::              |
|      | 13          | 5. 35. 37                            | 10. 16.31. 2            | 5.17.19 N              | + 15                   | — 8                   |
|      | 14          | 6. 19. 22                            | 10. 28.58.48            | 5. 8.17 N              | + 4                    | — 8                   |
|      | 15          | 7. 3. 17                             | 11. 11.41.39            | 4.44.27 N              | 0                      | — 15                  |
|      | 16          | 7. 48. 11                            | 11. 24.44.45            | 4. 5.22 N              | — 1                    | — 15                  |
|      | 19          | 10. 17. 21                           | 1. 6.32.13              | 0.48.49 N              | — 23                   | — 12                  |
|      | 20          | 11. 13. 57                           | 1. 21.23.10             | 0.33.52 S              | — 20                   | — 10                  |
|      | 21          | 12. 16. 11                           | 2. 6.37.33              | 1.54.55 S              | — 15                   | + 7                   |
|      | 25          | 16. 15. 59                           | 4. 8. 8.52              | 5.13. 3 S              | — 12                   | — 6                   |
|      | 26          | 17. 9. 32                            | 4. 22.58.49             | 5.12.32 S              | + 2                    | — 12                  |
|      | 29          | 19. 36. 54                           | 6. 5.17.34              | 3.22.38 S              | + 42                   | — 21                  |
|      | 30          | 20. 24. 18                           | 6. 18.44.23             | 2.20.48 S              | + 48                   | — 20                  |
| Dec. | 12          | 4. 57. 54                            | 11. 6.31.20             | 4.49. 2 N              | + 19                   | — 11                  |
|      | 13          | 5. 41. 13                            | 11. 19. 8. 4            | 4.16.54 N              | + 14                   | — 15                  |
|      | 14          | 6. 25. 42                            | 0. 2. 2.51              | 3.31. 1 N              | + 28                   | — 16                  |
|      | 16          | 8. 1. 57                             | 0. 29. 8.58             | 1.23.25 N              | + 25                   | — 15                  |
|      | 19          | 10. 53. 54                           | 2. 13.43.58             | 2.30.35 S              | — 5                    | + 25                  |
|      | 20          | 11. 58. 4                            | 2. 29.29. 2             | 3.38. 8 S              | + 5                    | + 8                   |
|      | 21          | 13. 2. 2                             | 3. 15.24.21             | 4.29.24 S              | + 12                   | + 6                   |
|      | 22          | 14. 2. 38                            | 4. 1.15.38              | 4.59.54 S              | + 6                    | — 10                  |
|      | 23          | 15. 0. 0                             | 4. 16.50.55             | 5. 7.13 S              | + 10                   | — 8                   |
|      | 26          | 17. 34. 29                           | 6. 0.54.28              | 3.20.28 S              | — 13                   | — 18                  |
| 1753 | 27          | 18. 22. 34                           | 6. 14.37.33             | 2.31. 9 S              | — 2                    | — 22                  |
|      | Jan. 17     | 10. 36. 27                           | 3. 6.30.53              | 4. 5. 9 S              | + 13                   | + 7                   |
|      | 23          | 15. 16. 25                           | 6. 9.16.19              | 2.40. 7 S              | — 17                   | + 12                  |
|      | 26          | 18. 43. 31                           | 7. 19.32.42             | 0.43.57 N              | — 32                   | + 9                   |
| Feb. | 9           | 4. 38. 17                            | 1. 2. 8.55              | 0.37.40 N              | — 21                   | + 16                  |
|      | 15          | 10. 18. 32                           | 3. 29.52.36             | 4.58.11 S              | — 5                    | — 2                   |
|      | 16          | 11. 17. 8                            | 4. 15.40.53             | 4.59.31 S              | — 25                   | + 11                  |
|      | 21          | 15. 45. 51                           | 7. 0.44.33              | 0.39.18 S              | — 6                    | + 7                   |
|      | 25          | 19. 5. 0                             | 8. 22.41.31             | 3.34.44 N              | — 27                   | — 19                  |
| Mar. | 8           | 2. 36. 34                            | 0. 28. 7.46             | 0.46.57 N              | — 19                   | + 20                  |
|      | 9           | 3. 26. 6 <sup>1</sup> / <sub>2</sub> | 1. 11.33.22             | 0.25. 2 S              | — 37                   | — 8                   |
|      | 10          | 4. 18. 14                            | 1. 25.14.48             | 1.37.34 S              | — 12                   | — 28                  |

|      | Days, N. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Lat. | Error of Tab. in Long. |
|------|----------|-----------------------------------|-------------------------|------------------------|-----------------------|------------------------|
| 1753 | S.       | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                    | S.                     |
| Mar. | 12       | 6. 9. 32                          | 2. 23. 34. 8            | 3. 45. 29 S            | — 2                   | — 12                   |
|      | 13       | 7. 6. 23                          | 3. 8. 13. 31            | 4. 31. 46 S            | — 22                  | — 2                    |
|      | 15       | 9. 2. 14                          | 4. 8. 22. 55            | 5. 9. 21 S             | + 2                   | — 5                    |
|      | 18       | 11. 45. 35                        | 5. 24. 14. 14           | 3. 28. 43 S            | + 7                   | — 10                   |
|      | 19       | 12. 40. 16                        | 6. 9. 10. 13            | 2. 22. 24 S            | + 24                  | + 5                    |
|      | 21       | 14. 24. 6                         | 7. 7. 48. 17            | 0. 8. 5 N              | — 6                   | — 17                   |
|      | 24       | 16. 57. 12                        | 8. 17. 33. 57           | 3. 26. 8 N             | + 20                  | + 13                   |
|      | 26       | 18. 34. 22                        | 9. 12. 32. 34           | 4. 45. 37 N            | — 46                  | + 38                   |
| Apr. | 11       | 6. 55. 18                         | 4. 3. 10. 33            | 5. 15. 47 S            | — 19                  | — 6                    |
|      | 15       | 10. 26. 14                        | 6. 2. 23. 59            | 2. 55. 29 S            | + 19                  | — 7                    |
|      | 17       | 12. 10. 14                        | 7. 1. 6. 34             | 0. 26. 48 S            | + 23                  | — 27                   |
|      | 19       | 13. 55. 9                         | 7. 28. 34. 53           | 2. 2. 1 N              | + 25                  | + 11                   |
|      | 21       | 15. 37. 19                        | 8. 24. 42. 10           | 3. 58. 38 N            | + 22                  | — 5                    |
|      | 22       | 16. 26. 30                        | 9. 7. 19. 48            | 4. 38. 28 N            | + 23                  | — 2                    |
|      | 23       | 17. 14. 1                         | 9. 19. 45. 31           | 5. 4. 31 N             | + 3                   | + 2                    |
|      | 26       | 19. 27. 54                        | 10. 26. 36. 47          | 4. 56. 56 N            | — 38                  | — 11                   |
| May  | 6        | 2. 56. 15                         | 2. 29. 0. 6             | 4. 13. 12 S            | + 11                  | — 17                   |
|      | 7        | 3. 54. 29                         | 3. 13. 51. 53           | 4. 53. 20 S            | + 2                   | — 12                   |
|      | 9        | 5. 46. 16                         | 4. 13. 34. 32           | 5. 13. 30 S            | — 4                   | 0                      |
|      | 10       | 6. 39. 8                          | 4. 28. 17. 6            | 4. 52. 40 S            | — 11                  | 0                      |
|      | 11       | 7. 30. 24                         | 5. 12. 51. 22           | 4. 13. 2 S             | + 42                  | + 4                    |
|      | 12       | 8. 20. 40                         | 5. 27. 15. 30           | 3. 18. 16 S            | + 53                  | — 17                   |
|      | 14       | 10. 0. 52                         | 6. 25. 29. 2            | 0. 57. 46 S            | + 43                  | — 3                    |
|      | 15       | 10. 51. 39                        | 7. 9. 16. 41            | 0. 17. 52 N            | + 17                  | + 10                   |
|      | 16       | 11. 43. 0                         | 7. 22. 50. 8            | 1. 31. 28 N            | — 13                  | — 1                    |
|      | 22       | 16. 38. 42                        | 10. 9. 19. 41           | 5. 12. 54 N            | + 2                   | — 3                    |
|      | 23       | 17. 22. 29                        | 10. 21. 34. 20          | 5. 1. 33 N             | — 17                  | + 2                    |
|      | 24       | 18. 5. 27                         | 11. 3. 51. 7            | 4. 36. 33 N            | — 24                  | — 1                    |
|      | 25       | 18. 48. 20                        | 11. 16. 15. 20          | 3. 58. 22 N            | + 37                  | — 40                   |
| June | 26       | 19. 31. 57                        | 11. 28. 52. 52          | 3. 8. 4 N              | — 30                  | + 3                    |
|      | 4        | 2. 43. 24                         | 3. 23. 20. 51           | 5. 3. 27 S             | + 41                  | — 13                   |
|      | 7        | 5. 27. 55                         | 5. 8. 28. 49            | 4. 19. 31 S            | + 19                  | 0                      |
|      | 8        | 6. 18. 35                         | 5. 22. 58. 34           | 3. 28. 53 S            | — 26                  | + 3                    |
|      | 9        | 7. 8. 14                          | 6. 7. 9. 52             | 2. 26. 18 S            | — 18                  | — 8                    |
|      | 10       | 7. 57. 38                         | 6. 21. 3. 57            | 1. 16. 3 S             | + 41                  | — 3                    |
|      | 11       | 8. 47. 18                         | 7. 4. 42. 29            | 0. 2. 54 S             | + 29                  | + 1                    |

|                              | D. N. | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------------------------------|-------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1753                         |       | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| June                         | 12    | 9. 37. 30                               | 7. 18. 7. 7                       | 1. 9. 40 N                       | + 23                         | — 45                        |
|                              | 18    | 14. 34. 9                               | 10. 4. 39. 3                      | 5. 5. 45 N                       | + 1                          | — 26                        |
|                              | 19    | 15. 18. 26                              | 10. 16. 54. 16                    | 4. 58. 29 N                      | + 10                         | — 19                        |
|                              | 21    | 16. 44. 2                               | 11. 11. 21. 57                    | 4. 4. 13 N                       | + 18                         | — 18                        |
|                              | 23    | 18. 10. 12                              | 0. 6. 17. 55                      | 2. 23. 18 N                      | — 16                         | + 2                         |
|                              | 24    | 18. 55. 33                              | 0. 19. 10. 18                     | 1. 19. 20 N                      | — 9                          | + 1                         |
|                              | 26    | 20. 34. 58                              | 1. 16. 12. 40                     | 1. 4. 2 S                        | — 23                         | — 19                        |
| July                         | 2     | 1. 28. 5                                | 4. 1. 55. 52                      | 5. 2. 8 S                        | + 46                         | + 15                        |
|                              | 5     | 4. 14. 8                                | 5. 18. 1. 57                      | 3. 35. 31 S                      | + 42                         | — 22                        |
|                              | 6     | 5. 5. 18                                | 6. 2. 38. 56                      | 2. 33. 58 S                      | + 30                         | + 12                        |
|                              | 7     | 5. 55. 26                               | 6. 16. 49. 54                     | 1. 25. 32 S                      | + 20                         | — 4                         |
|                              | 8     | 6. 45. 13                               | 7. 0. 37. 17                      | 0. 13. 17 S                      | + 18                         | + 7                         |
|                              | 9     | 7. 35. 3                                | 7. 14. 4. 7                       | 0. 57. 32 N                      | + 22                         | 0                           |
|                              | 10    | 8. 25. 9                                | 7. 27. 14. 21                     | 2. 3. 51 N                       | + 5                          | — 3                         |
|                              | 12    | 10. 5. 17                               | 8. 22. 55. 43                     | 3. 51. 6 N                       | + 9                          | — 15                        |
|                              | 13    | 10. 54. 28                              | 9. 5. 31. 45                      | 4. 27. 8 N                       | — 13                         | — 2                         |
|                              | 15    | 12. 30. 59                              | 10. 0. 22. 57                     | 4. 59. 53 N                      | — 6                          | — 32                        |
|                              | 17    | 13. 59. 23                              | 10. 24. 53. 7                     | 4. 36. 36 N                      | 0                            | — 28                        |
|                              | 19    | 15. 24. 18                              | 11. 19. 20. 8                     | 3. 22. 54 N                      | + 11                         | — 30                        |
|                              | 23    | 18. 24. 53                              | 1. 10. 14. 9                      | 0. 46. 40 S                      | + 4                          | — 22                        |
|                              | 25    | 20. 11. 55                              | 2. 8. 6. 35                       | 3. 0. 54 S                       | — 39                         | — 17                        |
|                              | 26    | 21. 10. 17                              | 2. 22. 52. 38                     | 3. 56. 38 S                      | — 47                         | — 36                        |
| Aug.<br>New<br>Qua-<br>drant | 9     | 8. 51. 44                               | 9. 1. 35. 20                      | 4. 25. 42 N                      | — 14                         | — 30                        |
|                              | 11    | 10. 26. 34                              | 9. 26. 22. 51                     | 5. 1. 5 N                        | — 19                         | — 31                        |
|                              | 16    | 14. 6. 1                                | 11. 27. 41. 59                    | 2. 37. 19 N                      | + 2                          | + 14                        |
|                              | 18    | 15. 33. 48                              | 0. 22. 43. 34                     | 0. 31. 51 N                      | + 1                          | + 2                         |
|                              | 19    | 16. 20. 24                              | 1. 5. 34. 30                      | 0. 36. 48 S                      | — 5                          | — 1                         |
|                              | 20    | 17. 9. 36                               | 1. 18. 45. 6                      | 1. 45. 3 S                       | — 12                         | — 4                         |
|                              | 21    | 18. 1. 44 $\frac{1}{2}$                 | 2. 2. 20. 16                      | 2. 49. 49 S                      | — 16                         | — 10                        |
|                              | 24    | 20. 53. 59                              | 2. 16. 3. 34                      | 4. 59. 23 S                      | — 49                         | — 8                         |
| Sept.                        | 25    | 21. 52. 33                              | 4. 1. 33. 3                       | 5. 5. 32 S                       | — 60                         | — 31                        |
|                              | 7     | 8. 23. 46 $\frac{1}{2}$                 | 9. 22. 19. 19                     | 5. 7. 54 N                       | + 3                          | — 31                        |
|                              | 10    | 10. 37. 16                              | 10. 29. 3. 58                     | 4. 23. 50 N                      | — 15                         | — 20                        |
|                              | 14    | 13. 32. 37                              | 0. 18. 48. 1                      | 0. 45. 17 N                      | — 13                         | — 7                         |
|                              | 15    | 14. 18. 41                              | 1. 1. 36. 4                       | 0. 24. 33 S                      | — 27                         | — 11                        |
|                              | 17    | 15. 57. 17                              | 1. 27. 56. 23                     | 2. 40. 43 S                      | — 30                         | — 16                        |



|       | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1753  |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Sept. | 18          | 16. 50. 27                        | 2. 11. 34. 43           | 3. 39. 43 S            | — 35                   | — 18                  |
|       | 19          | 17. 45. 30                        | 2. 25. 35. 17           | 4. 27. 16 S            | — 36                   | — 11                  |
|       | 20          | 18. 41. 56                        | 3. 9. 59. 32            | 4. 59. 40 S            | — 37                   | — 12                  |
|       | 21          | 19. 38. 55                        | 3. 24. 47. 18::         | 5. 14. 23 S            | — 44::                 | — 72                  |
| Oct.  | 1           | 3. 48. 30                         | 8. 9. 2. 33             | 3. 32. 14: N           | + 39                   | — 3:                  |
|       | 2           | 4. 40. 16                         | 8. 22. 17. 15           | 4. 20. 9 N             | + 39                   | — 1                   |
|       | 4           | 6. 18. 48                         | 9. 17. 45. 25           | 5. 12. 11 N            | + 18                   | — 10                  |
|       | 5           | 7. 5. 19                          | 10. 0. 8. 25            | 5. 15. 50 N            | + 8                    | — 19                  |
|       | 6           | 7. 50. 14                         | 10. 12. 24. 14          | 5. 5. 1 N              | — 8                    | — 18                  |
|       | 7           | 8. 33. 55                         | 10. 24. 37. 26          | 4. 40. 18 N            | — 14                   | — 14                  |
|       | 8           | 9. 16. 53 $\frac{1}{2}$           | 11. 6. 52. 38           | 4. 2. 44 N             | — 17                   | — 10                  |
|       | 10          | 10. 43. 3                         | 0. 1. 42. 52            | 2. 14. 49 N            | — 19                   | — 4                   |
|       | 11          | 11. 27. 26                        | 0. 14. 23. 10           | 1. 8. 35 N             | — 10                   | — 8                   |
|       | 13          | 13. 3. 46                         | 1. 10. 24. 54           | 1. 14. 40 S            | — 7                    | — 6                   |
|       | 14          | 13. 54. 14                        | 1. 23. 47. 24           | 2. 24. 2 S             | — 16                   | — 2                   |
|       | 15          | 14. 46. 55                        | 2. 7. 25. 27            | 3. 26. 42 S            | — 22                   | — 5                   |
|       | 16          | 15. 41. 23                        | 2. 21. 19. 15           | 4. 18. 28 S            | — 35                   | — 6                   |
|       | 19          | 18. 27. 53                        | 4. 4. 29. 22            | 5. 14. 29 S            | — 4                    | + 2                   |
|       | 30          | 3. 20. 29                         | 8. 28. 29. 27           | 4. 40. 22 N            | + 6                    | + 68                  |
|       | 31          | 4. 10. 39                         | 9. 12. 26. 20           | 5. 7. 0 N              | + 15                   | — 14                  |
| Nov.  | 2           | 5. 44. 38                         | 10. 7. 29. 16           | 5. 11. 9 N             | + 15                   | — 8                   |
|       | 4           | 7. 12. 1                          | 11. 1. 58. 0            | 4. 18. 59 N            | — 6                    | — 13                  |
|       | 5           | 7. 54. 39                         | 11. 14. 13. 9           | 3. 34. 38 N            | — 20                   | — 20                  |
|       | 8           | 10. 6. 51                         | 0. 22. 1. 45            | 0. 26. 48 N            | — 5                    | — 13                  |
|       | 10          | 11. 46. 3 $\frac{1}{2}$           | 1. 18. 40. 55           | 1. 57. 12 S            | + 1                    | + 9                   |
|       | 11          | 12. 40. 12                        | 2. 2. 30. 7             | 3. 3. 43 S             | — 4                    | + 3                   |
|       | 13          | 14. 31. 49 $\frac{1}{2}$          | 3. 0. 57. 23            | 4. 42. 31 S            | — 16                   | + 11                  |
|       | 16          | 17. 18. 38                        | 4. 14. 47. 42           | 4. 57. 41 S            | — 6                    | + 5                   |
|       | 18          | 19. 3. 27                         | 5. 14. 8. 49            | 3. 31. 29 S            | + 6                    | + 2                   |
|       | 19          | 19. 54. 45                        | 5. 28. 45. 8            | 2. 26. 19 S            | + 28                   | — 6                   |
|       | 20          | 20. 46. 7                         | 6. 13. 16. 54::         | 1. 12. 11 S            | + 26::                 | — 16                  |
|       | 21          | 21. 38. 5                         | 6. 27. 42. 23           | 0. 7. 27:: N           | + 87                   | — 52::                |
|       | 29          | 3. 37. 28 $\frac{1}{2}$           | 10. 2. 12. 23           | 5. 7. 51 N             | — 1                    | — 6                   |
|       | 30          | 4. 22. 50                         | 10. 14. 37. 1           | 4. 53. 31 N            | — 14                   | — 12                  |
| Dec.  | 2           | 5. 49. 10                         | 11. 9. 3. 55            | 3. 46. 2 N             | + 1                    | — 12                  |
|       | 3           | 6. 31. 29                         | 11. 21. 16. 57          | 2. 56. 7 N             | + 2                    | — 21                  |

|              | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|--------------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1753         |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Dec.         | 6           | 8. 44. 36 $\frac{1}{2}$           | 0. 29. 7. 38::          | 0. 17. 33 S            | - 15::                 | + 12                  |
|              | 7           | 9. 33. 32                         | 1. 12. 25. 30           | 1. 27. 51 S            | + 6                    | + 24                  |
|              | 8           | 10. 25. 35                        | 1. 26. 9. 48            | 2. 35. 22 S            | + 17                   | + 24                  |
|              | 9           | 11. 20. 39                        | 2. 10. 20. 45           | 3. 35. 22 S            | + 4                    | + 21                  |
|              | 17          | 18. 43. 11                        | 6. 8. 49. 22            | 1. 24. 51 S            | + 18                   | - 14                  |
|              | 29          | 3. 44. 38                         | 11. 4. 8. 58            | 3. 50. 21 N            | - 33                   | - 24                  |
|              | 30          | 4. 26. 52                         | 11. 16. 17. 55          | 3. 2. 54 N             | - 15                   | - 9                   |
|              | 31          | 5. 8. 58                          | 11. 28. 28. 4           | 2. 7. 46 N             | - 5                    | - 14                  |
| 1754<br>Jan. | 2           | 6. 35. 55                         | 0. 23. 16. 10           | 0. 0. 34 N             | - 11                   | - 33                  |
|              | 3           | 7. 22. 24                         | 1. 6. 6. 36             | 1. 7. 18 S             | + 4                    | - 0                   |
|              | 5           | 9. 4. 36                          | 2. 3. 9. 52             | 3. 14. 11 S            | + 1                    | + 11                  |
|              | 6           | 10. 0. 34 $\frac{1}{2}$           | 2. 17. 29. 1            | 4. 5. 1 S              | - 11                   | + 3                   |
|              | 7           | 10. 58. 59 $\frac{1}{2}$          | 3. 2. 18. 39            | 4. 41. 21 S            | + 12                   | + 18                  |
|              | 8           | 11. 58. 33                        | 3. 17. 33. 13           | 4. 59. 5 S             | + 18                   | + 11                  |
|              | 9           | 13. 0. 10                         | 4. 3. 4. 35             | 4. 55. 3 S             | + 31                   | + 10                  |
|              | 11          | 14. 53. 40 $\frac{1}{2}$          | 5. 4. 7. 0              | 3. 43. 53 S            | + 1                    | + 7                   |
|              | 17          | 20. 5. 48                         | 8. 0. 17. 40            | 3. 7. 56 N             | - 21                   | + 5                   |
|              | 18          | 20. 57. 24 $\frac{1}{2}$          | 8. 13. 36. 46           | 3. 57. 25: N           | - 17                   | - 16 :                |
|              | 26          | 2. 24. 4                          | 11. 11. 49. 0           | 3. 8. 5:: N            | - 24                   | + 23::                |
|              | 30          | 5. 15. 44                         | 1. 0. 48. 58            | 0. 56. 33 S            | - 25                   | - 1                   |
|              | 31          | 6. 2. 29                          | 1. 13. 34. 10           | 2. 1. 22 S             | - 14                   | 0                     |
| Feb.         | 3           | 8. 40. 27                         | 2. 24. 35. 44::         | 4. 34. 53 S            | + 22::                 | 0                     |
|              | 4           | 9. 38. 26                         | 3. 9. 22. 40            | 4. 58. 45 S            | - 9                    | + 7                   |
|              | 5           | 10. 37. 37                        | 3. 24. 39. 57           | 5. 2. 41 S             | - 5                    | + 2                   |
|              | 6           | 11. 36. 46                        | 4. 10. 19. 51           | 4. 44. 20 S            | + 3                    | + 1                   |
|              | 13          | 18. 2. 18                         | 7. 26. 1. 49            | 3. 4. 59 N             | - 54                   | - 10                  |
|              | 18          | 22. 11. 54 $\frac{1}{2}$          | 10. 0. 52. 43::         | 5. 0. 7 N              | - 22::                 | + 3                   |
|              | 28          | 4. 45. 59                         | 1. 21. 48. 13           | 2. 53. 32 S            | - 41                   | - 10                  |
| Mar.         | 1           | 5. 35. 56                         | 2. 4. 54. 9             | 3. 47. 56 S            | - 23                   | - 14                  |
|              | 2           | 6. 28. 30                         | 2. 18. 26. 3            | 4. 31. 37 S            | - 22                   | - 13                  |
|              | 3           | 7. 23. 21                         | 3. 2. 27. 20            | 5. 0. 50 S             | - 17                   | - 9                   |
|              | 4           | 8. 19. 56                         | 3. 17. 0. 7             | 5. 12. 19 S            | - 17                   | - 6                   |
|              | 5           | 9. 17. 25                         | 4. 2. 3. 15             | 5. 3. 7 S              | - 26                   | - 9                   |
|              | 6           | 10. 15. 3                         | 4. 17. 32. 7            | 4. 31. 52 S            | - 31                   | - 1                   |
|              | 7           | 11. 12. 15                        | 5. 3. 18. 10            | 3. 39. 44 S            | - 12                   | 0                     |
|              | 9           | 13. 7. 9 $\frac{1}{2}$            | 6. 4. 59. 25            | 1. 9. 18 S             | + 25                   | + 10                  |

|      | Days,<br>N. S. | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------|----------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1754 |                | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Mar. | 28             | 3. 32. 26                               | 2. 0. 41. 18::                    | 3. 37. 21::S                     | - 47::                       | - 11::                      |
|      | 31             | 6. 10. 23½                              | 3. 11. 21. 37                     | 5. 15. 53 S                      | - 16                         | - 18                        |
| Apr. | 2              | 8. 0. 48½                               | 4. 10. 26. 10                     | 4. 52. 45 S                      | - 23                         | + 1                         |
|      | 3              | 8. 56. 9                                | 4. 25. 33. 6                      | 4. 10. 41 S                      | - 21                         | - 2                         |
|      | 4              | 9. 51. 24                               | 5. 10. 57. 32                     | 3. 9. 46 S                       | - 22                         | + 4                         |
|      | 5              | 10. 46. 40                              | 5. 26. 32. 28                     | 1. 54. 13 S                      | - 8                          | + 6                         |
|      | 7              | 12. 40. 27                              | 6. 27. 39. 7                      | 0. 55. 49 N                      | + 39                         | + 3                         |
|      | 8              | 13. 36. 45                              | 7. 12. 51. 10                     | 2. 16. 13 N                      | + 41                         | - 13                        |
|      | 12             | 17. 14. 38                              | 9. 9. 14. 47                      | 5. 14. 28 N                      | + 5                          | - 8                         |
|      | 14             | 18. 51. 36                              |                                   | A.R.                             | - 15                         |                             |
|      | 28             | 5. 0. 26                                | 3. 21. 3. 55                      | 5. 14. 24 S                      | + 23                         | + 3                         |
|      | 30             | 6. 48. 8                                | 4. 19. 54. 55                     | 4. 26. 14 S                      | + 14                         | - 8                         |
| May  | 1              | 7. 41. 24½                              | 5. 4. 42. 22                      | 3. 34. 5 S                       | + 21                         | + 3                         |
|      | 2              | 8. 34. 36                               | 5. 19. 41. 55                     | 2. 26. 51 S                      | + 4                          | + 8                         |
|      | 3              | 9. 28. 8                                | 6. 4. 50. 7                       | 1. 8. 52 S                       | 0                            | + 7                         |
|      | 4              | 10. 22. 27                              | 6. 20. 1. 59                      | 0. 14. 7 N                       | - 2                          | - 10                        |
|      | 5              | 11. 17. 45                              | 7. 5. 10. 56                      | 1. 36. 2 N                       | + 5                          | - 14                        |
|      | 6              | 12. 15. 6                               | 7. 20. 10. 44                     | 2. 50. 22 N                      | + 12                         | - 24                        |
|      | 17             | 21. 6. 56                               | 0. 13. 39. 10                     | 0. 19. 33 N                      | - 32                         | - 47                        |
|      |                |                                         |                                   | A.R.                             | - 11                         |                             |
|      | 18             | 21. 51. 12                              |                                   | A.R.                             | - 13                         |                             |
|      | 28             | 5. 37. 43                               | 5. 0. 5. 7                        | 3. 42. 43 S                      | + 21                         | - 4                         |
|      | 30             | 7. 21. 41                               | 5. 29. 26. 15                     | 1. 29. 32 S                      | 0                            | - 1                         |
|      | 31             | 8. 13. 57                               | 6. 14. 10. 58                     | 0. 11. 18 S                      | + 25                         | + 5                         |
| June | 2              | 10. 1. 25                               | 7. 13. 37. 42                     | 2. 21. 24 N                      | + 5                          | 0                           |
|      | 3              | 10. 56. 44                              | 7. 28. 12. 33                     | 3. 25. 16 N                      | - 8                          | - 13                        |
|      | 5              | 12. 49. 57                              | 8. 26. 43. 0                      | 4. 47. 43::N                     | - 7                          | + 8::                       |
|      | 6              | 13. 43. 36                              | 9. 10. 28. 49                     | 5. 3. 22 N                       | - 11                         | - 11                        |
|      | 14             | 19. 45. 14½                             | 0. 20. 57. 10                     | 0. 30. 47: S                     | - 31                         | - 1:                        |
|      | 24             | 3. 34. 16                               | 4. 25. 32. 31                     | 3. 46. 35 S                      | + 33                         | - 17                        |
|      | 29             | 7. 55. 31                               | 7. 8. 37. 58                      | 2. 7. 5 N                        | + 18                         | - 5                         |
| July | 2              | 10. 37. 48                              | 8. 21. 2. 50                      | 4. 38. 16 N                      | - 21                         | - 20                        |
|      | 4              | 12. 25. 51                              | 9. 18. 16. 29                     | 4. 59. 21 N                      | - 19                         | - 17                        |
|      | 13             | 19. 9. 9                                | 1. 10. 43. 43                     | 2. 24. 35 S                      | - 11                         | + 11                        |
|      | 22             | 2. 20. 30                               | 5. 4. 53. 12                      | 2. 59. 41::S                     | + 12                         | - 3::                       |



|       | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1754  |             | H. M. S.                          | S. D. M. S.             | D, M. S.               | S.                     | S.                    |
| July  | 25          | 5. 0. 4 $\frac{1}{2}$             | 6. 19. 49. 9            | 0. 46. 12 N            | + 4                    | + 13                  |
|       | 31          | 10. 17. 34                        | 9. 13. 27. 27           | 5. 3. 30 N             | - 15                   | - 11                  |
| Aug.  | 1           | 11. 7. 46                         | 9. 26. 35. 16           | 4. 52. 13 N            | - 27                   | - 18                  |
|       | 2           | 11. 55. 57 $\frac{1}{2}$          | 10. 9. 28. 55           | 4. 26. 6 N             | - 34                   | - 26                  |
|       | 3           | 12. 44. 14                        | 10. 22. 10. 1           | 3. 46. 52 N            | - 25                   | - 21                  |
|       | 4           | 13. 28. 36 $\frac{1}{2}$          | 11. 4. 37. 35           | 2. 57. 16 N            | - 15                   | - 16                  |
|       | 8           | 16. 19. 6                         | 0. 23. 23. 3            | 1. 12. 18 S            | - 6                    | + 16                  |
|       | 9           | 17. 3. 13                         | 1. 5. 40. 20            | 2. 14. 39 S            | - 12                   | + 11                  |
|       | 10          | 17. 49. 13                        | 1. 18. 11. 13           | 3. 11. 50 S            | - 20                   | + 5                   |
|       | 13          | 20. 22. 13                        | 2. 28. 1. 43            | 5. 1. 55 S             | - 39                   | + 11                  |
|       | 14          | 21. 17. 52                        | 3. 12. 17. 10           | 5. 7. 36 S             | - 30                   | + 28                  |
|       | 21          | 2. 52. 30                         | 6. 14. 10. 43           | 0. 26. 55 N            | + 43                   | + 28                  |
|       | 23          | 4. 41. 10                         | 7. 13. 59. 20           | 2. 58. 12 N            | + 20                   | + 4                   |
|       | 25          | 6. 29. 15                         | 8. 12. 20. 37           | 4. 38. 19 N            | + 6                    | + 4                   |
|       | 26          | 7. 22. 23                         | 8. 25. 59. 55           | 5. 3. 49 N             | + 12                   | - 13                  |
|       | 27          | 8. 14. 16                         | 9. 9. 20. 46            | 5. 11. 59 N            | + 13                   | - 14                  |
|       | 28          | 9. 4. 29                          | 9. 22. 25. 20           | 5. 3. 38 N             | 0                      | - 17                  |
|       | 30          | 10. 39. 12                        | 10. 17. 53. 0           | 4. 3. 6 N              | - 22                   | - 22                  |
|       | 31          | 11. 23. 55                        | 11. 0. 20. 13           | 3. 14. 57 N            | - 40                   | - 21                  |
| Sept. | 1           | 12. 8. 19                         | 11. 12. 38. 50          | 2. 18. 4 N             | - 17                   | - 20                  |
|       | 2           | 12. 51. 53                        | 11. 24. 51. 28          | 1. 15. 18 N            | - 17                   | - 24                  |
|       | 4           | 14. 16. 42                        | 0. 19. 7. 45            | 0. 57. 23 S            | - 16                   | + 14                  |
|       | 5           | 15. 0. 6                          | 1. 1. 18. 41            | 2. 1. 40 S             | - 10                   | + 9                   |
|       | 6           | 15. 44. 53                        | 1. 13. 37. 8            | 3. 1. 9 S              | - 6                    | + 3                   |
|       | 8           | 17. 20. 18                        | 2. 8. 56. 26            | 4. 34. 30 S            | - 14                   | - 2                   |
|       | 11          | 19. 59. 5                         | 3. 19. 52. 2            | 5. 10. 0 S             | - 41                   | + 5                   |
|       | 12          | 20. 54. 49                        |                         | A.R.                   | + 52::                 |                       |
|       | 21          | 4. 22. 7                          | 8. 7. 16. 47            | 4. 31. 35 N            | + 38                   | - 6                   |
|       | 22          | 5. 16. 59                         | 8. 21. 24. 0            | 5. 3. 35 N             | + 24                   | - 11                  |
|       | 23          | 6. 10. 14                         | 9. 5. 4. 15             | 5. 17. 15 N            | + 22                   | - 18                  |
|       | 24          | 7. 1. 26                          | 9. 18. 20. 19           | 5. 13. 10 N            | + 19                   | - 9                   |
|       | 25          | 7. 50. 25                         | 10. 1. 15. 46           | 4. 53. 19 N            | + 18                   | - 9                   |
|       | 26          | 8. 37. 14 $\frac{1}{2}$           | 10. 13. 54. 37          | 4. 19. 35 N            | + 9                    | - 9                   |
|       | 27          | 9. 22. 13                         | 10. 26. 20. 54          | 3. 34. 5 N             | - 2                    | - 16                  |
|       | 28          | 10. 5. 46                         | 11. 8. 38. 8            | 3. 39. 2 N             | - 10                   | - 10                  |
|       | 29          | 10. 48. 25                        | 11. 20. 49. 38          | 1. 37. 12 N            | - 15                   | - 10                  |
|       | 30          | 11. 30. 41 $\frac{1}{2}$          | 0. 2. 58. 20            | 0. 31. 9 N             | - 7                    | - 9                   |

|      | Days, N. S. | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------|-------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1754 |             | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Oct. | 1           | 12. 15. 12                              | 0. 15. 8. 9                       | 0. 36. 23 S                      | — 5                          | + 10                        |
|      | 3           | 13. 42. 48                              | 1. 9. 36. 55                      | 2. 44. 15 S                      | — 5                          | + 6                         |
|      | 6           | 16. 5. 55                               | 2. 17. 31. 0                      | 4. 56. 45 S                      | — 11                         | — 10                        |
|      | 7           | 16. 57. 3                               | 3. 0. 40. 59                      | 5. 14. 48 S                      | — 3                          | — 7                         |
|      | 9           | 18. 42. 53                              | 3. 28. 8. 52                      | 4. 59. 28 S                      | + 2                          | — 16                        |
|      | 10          | 19. 36. 51                              | 4. 12. 31. 27                     | 4. 23. 28 S                      | — 9                          | + 3                         |
|      | 20          | 4. 0. 59                                | 8. 29. 33. 10                     | 5. 12. 28 N                      | + 33                         | — 7                         |
|      | 21          | 4. 54. 40                               | 9. 13. 21. 41                     | 5. 15. 8 N                       | + 25                         | — 14                        |
|      | 22          | 5. 45. 40                               | 9. 26. 41. 23                     | 5. 0. 27 N                       | + 21                         | — 14                        |
|      | 23          | 6. 33. 57                               | 10. 9. 36. 14                     | 4. 30. 46 N                      | + 18                         | — 11                        |
|      | 24          | 7. 19. 50 $\frac{1}{2}$                 | 10. 22. 11. 21                    | 3. 48. 43 N                      | + 21                         | — 25                        |
|      | 26          | 8. 46. 43                               | 11. 16. 44. 27                    | 1. 57. 12 N                      | + 5                          | — 5                         |
|      | 28          | 10. 11. 17                              | 0. 11. 0. 54                      | 0. 13. 45 S                      | — 2                          | + 6                         |
|      | 29          | 10. 54. 15                              | 0. 23. 12. 50                     | 1. 19. 54 S                      | + 12                         | + 12                        |
| Nov. | 5           | 16. 37. 45                              | 3. 23. 29. 17                     | 5. 0. 29 S                       | + 9                          | + 2                         |
|      | 6           | 17. 30. 9                               | 4. 7. 21. 35                      | 4. 31. 49 S                      | + 19                         | — 1                         |
|      | 7           | 18. 22. 30                              | 4. 21. 32. 32                     | 3. 46. 3 S                       | + 24                         | — 6                         |
|      | 8           | 19. 14. 54                              |                                   | A.R.                             | + 17                         |                             |
|      | 10          | 21. 1. 22                               | 6. 6. 1. 58                       | 0. 10. 28 S                      | — 1                          | — 2                         |
|      | 11          | 21. 56. 19                              |                                   | A.R.                             | — 10                         |                             |
|      | 18          | 3. 35. 36                               | 9. 20. 50. 37                     | 4. 59. 58 N                      | 0                            | — 4                         |
|      | 19          | 4. 26. 32                               | 10. 4. 16. 53                     | 4. 35. 8 N                       | 0                            | — 9                         |
|      | 20          | 5. 14. 31                               | 10. 17. 16. 3                     | 3. 56. 35 N                      | + 8                          | — 7                         |
|      | 21          | 5. 59. 58                               | 10. 29. 53. 6                     | 3. 7. 31 N                       | + 2                          | — 6                         |
|      | 24          | 8. 8. 15                                | 0. 6. 32. 40                      | 0. 3. 45 N                       | — 2                          | — 13                        |
|      | 26          | 9. 34. 28                               | 1. 0. 58. 40                      | 2. 3. 51 S                       | — 3                          | + 13                        |
|      | 27          | 10. 19. 42                              | 1. 13. 25. 45                     | 3. 1. 24 S                       | + 13                         | + 10                        |
|      | 28          | 11. 6. 53                               | 1. 26. 6. 29                      | 3. 50. 40 S                      | + 24                         | + 17                        |
|      | 29          | 11. 56. 7                               | 2. 9. 2. 15                       | 4. 29. 9 S                       | + 33                         | + 16                        |
|      | 30          | 12. 49. 22                              | 2. 22. 14. 22                     | 4. 54. 1 S                       | + 50                         | + 18                        |
| Dec. | 1           | 13. 41. 42                              | 3. 5. 40. 29                      | 5. 3. 8. S                       | + 24                         | + 21                        |
|      | 9           | 20. 39. 57                              | 7. 0. 2. 11                       | 2. 4. 52 N                       | + 6                          | — 4                         |
|      | 17          | 3. 5. 11 $\frac{1}{2}$                  | 10. 11. 22. 41                    | 4. 2. 17 N                       | — 30                         | + 6                         |
|      | 18          | 3. 52. 49                               | 10. 24. 24. 38                    | 3. 15. 23 N                      | — 20                         | — 2                         |
|      | 19          | 4. 38. 0                                | 11. 7. 4. 20                      | 2. 10. 53 N                      | — 3                          | — 10                        |
|      | 20          | 5. 21. 26 $\frac{1}{2}$                 | 11. 19. 27. 25                    | 1. 18. 50 N                      | — 4                          | — 13                        |
|      | 26          | 9. 47. 48                               | 2. 3. 39. 40                      | 4. 19. 31 S                      | + 16                         | + 26                        |
|      | 28          | 11. 31. 2 $\frac{1}{2}$                 | 3. 0. 20. 28                      | 4. 59. 37 S                      | + 33                         | + 23                        |

|      | DAYS, N | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|------|---------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1755 | S.      | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Jan. | 3       | 16. 51. 44                        | 5. 26. 1. 46            | 0. 35. 45 S            | — 7                    | + 6                   |
|      | 15      | 2. 30. 34 $\frac{1}{2}$           | 11. 1. 29. 9            | 2. 32. 29 N            | — 52                   | + 5                   |
|      | 17      | 3. 58. 37                         | 11. 26. 50. 59          | 0. 26. 12 N            | — 33                   | — 4                   |
|      | 22      | 7. 38. 16                         | 1. 27. 54. 30           | 4. 15. 38 S            | — 31                   | + 17                  |
|      | 23      | 8. 27. 12 $\frac{1}{2}$           | 2. 10. 46. 39           | 4. 46. 41 S            | — 8                    | + 13                  |
|      | 24      | 9. 18. 31                         | 2. 24. 2. 21            | 5. 3. 20 S             | + 1                    | + 18                  |
|      | 27      | 12. 2. 46 $\frac{1}{2}$           | 4. 6. 17. 16            | 4. 8. 57 S             | + 26                   | + 15                  |
|      | 31      | 15. 39. 25                        | 6. 5. 52. 20            | 0. 29. 54 N            | — 10                   | + 2                   |
| Feb. | 1       | 16. 32. 18                        | 6. 20. 43. 54           | 1. 48. 9 N             | — 28                   | — 9                   |
|      | 2       | 17. 25. 32 $\frac{1}{2}$          | 7. 5. 27. 17            | 2. 58. 26 N            | — 27                   | — 8                   |
|      | 3       | 18. 19. 28                        | 7. 20. 1. 17            | 3. 56. 33 N            | — 30                   | — 14                  |
|      | 18      | 5. 30. 48                         | 1. 22. 35. 58           | 4. 10. 48 S            | — 30                   | + 8                   |
| Mar. | 17      | 3. 26. 23                         | 1. 18. 2. 12            | 3. 58. 56 S            | — 31                   | + 8                   |
|      | 22      | 7. 31. 42                         | 3. 22. 11. 46           | 4. 53. 23 S            | — 30                   | — 22                  |
|      | 23      | 8. 24. 54                         | 4. 6. 10. 47            | 4. 14. 47 S            | — 25                   | — 9                   |
|      | 25      | 10. 13. 17                        | 5. 5. 36. 20            | 2. 8. 28 S             | — 14                   | — 14                  |
|      | 28      | 13. 2. 44                         | 6. 22. 24. 25           | 2. 4. 35 N             | + 44                   | — 2                   |
|      | 29      | 14. 0. 3                          | 7. 8. 7. 56             | 3. 19. 6 N             | + 54                   | — 6                   |
| Apr. | 16      | 3. 44. 11                         | 2. 21. 10. 6            | 5. 11. 40 S            | — 4                    | — 65                  |
|      | 17      | 4. 33. 41                         | 3. 3. 56. 53            | 5. 12. 40 S            | — 12                   | — 17                  |
|      | 18      | 5. 24. 8                          | 3. 17. 0. 15            | 4. 58. 37 S            | 0                      | — 24                  |
|      | 19      | 6. 15. 22                         | 4. 0. 24. 19            | 4. 27. 58 S            | + 8                    | — 17                  |
|      | 20      | 7. 7. 9                           | 4. 14. 12. 22           | 3. 41. 14 S            | + 11                   | — 17                  |
|      | 22      | 8. 52. 25                         | 5. 13. 10. 24           | 1. 25. 40 S            | — 13                   | — 8                   |
|      | 25      | 11. 38. 31                        | 6. 29. 40. 48           | 2. 39. 37 N            | + 10                   | — 8                   |
|      | 26      | 12. 39. 24                        | 7. 15. 34. 23           | 3. 46. 45 N            | + 40                   | — 9                   |
| May  | 3       | 19. 4. 18                         | 10. 26. 21. 19          | 2. 45. 40 N            | — 10                   | — 9                   |
|      | 4       | 19. 49. 17                        | 11. 8. 57. 49           | 1. 44. 9 N             | — 12                   | — 3                   |
|      | 17      | 5. 2. 7 $\frac{1}{2}$             | 4. 9. 26. 34            | 3. 47. 27 S            | + 34                   | — 7                   |
|      | 18      | 5. 52. 51 $\frac{1}{2}$           | 4. 23. 10. 15           | 2. 52. 30 S            | + 32                   | — 10                  |
|      | 19      | 6. 43. 46                         | 5. 7. 15. 2             | 1. 45. 30 S            | + 31                   | — 6                   |
|      | 20      | 7. 35. 16                         | 5. 21. 43. 17           | 0. 30. 19 S            | + 13                   | — 11                  |
|      | 22      | 9. 22. 10                         | 6. 21. 50. 12           | 2. 6. 35 N             | — 25                   | — 1                   |
|      | 23      | 10. 18. 33                        | 7. 7. 22. 15            | 3. 16. 23 N            | — 22                   | — 18                  |
|      | 26      | 13. 19. 47                        | 8. 24. 12. 15           | 5. 2. 36 N             | + 32                   | — 15                  |



|       | Days,<br>N. | Mean Time<br>of Tranfit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|-------|-------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1755  |             | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| May   | 27          | 14. 18. 51                              | 9. 9. 15. 29                      | 4. 55. 40 N                      | + 36                         | — 14                        |
|       | 28          | 15. 15. 23                              | 9. 23. 48. 30                     | 4. 29. 41 N                      | + 24                         | — 19                        |
|       | 29          | 16. 8. 37                               | 10. 7. 48. 24                     | 3. 48. 0 N                       | + 16                         | — 14                        |
| June  | 1           | 18. 30. 2                               | 11. 16. 55. 0                     | 0. 49. 40 N                      | — 11                         | + 7                         |
|       | 2           | 19. 13. 11                              | 11. 29. 17. 5                     | 0. 15. 51 S                      | — 19                         | — 9                         |
|       | 3           | 19. 55. 39                              | 0. 11. 29. 22                     | 1. 19. 45 S                      | — 18                         | — 10                        |
|       | 16          | 5. 31. 6                                | 5. 16. 53. 49                     | 0. 41. 2 S                       | + 31                         | — 8                         |
|       | 19          | 8. 7. 3                                 | 7. 0. 49. 10                      | 2. 58. 45 N                      | + 5                          | — 5                         |
|       | 20          | 9. 2. 41                                | 7. 15. 59. 9                      | 3. 56. 13 N                      | — 16                         | — 15                        |
|       | 21          | 10. 0. 28                               | 8. 1. 18. 10                      | 4. 36. 38 N                      | + 32                         | + 19                        |
|       | 24          | 12. 59. 54                              | 9. 16. 42. 42                     | 4. 37. 42 N                      | — 1                          | — 26                        |
|       | 25          | 13. 55. 40                              | 10. 1. 10. 22                     | 3. 59. 38 N                      | + 5                          | — 22                        |
| July  | 4           | 20. 47. 0                               | 1. 25. 44. 5                      | 4. 28. 53 S                      | — 5                          | + 24                        |
|       | 14          | 4. 19. 39                               | 5. 26. 56. 36                     | 0. 26. 8 N                       | + 14                         | + 11                        |
|       | 15          | 5. 10. 36½                              | 6. 11. 23. 7                      | 1. 41. 38 N                      | + 16                         | + 16                        |
|       | 18          | 7. 51. 11                               | 7. 25. 33. 53                     | 4. 34. 20 N                      | + 11                         | — 2                         |
|       | 20          | 9. 45. 59                               | 8. 25. 20. 4                      | 5. 5. 24 N                       | — 5                          | — 14                        |
|       | 24          | 13. 27. 37                              | 10. 22. 31. 13                    | 2. 28. 25 N                      | — 6                          | — 24                        |
|       | 25          | 14. 16. 1                               | 11. 5. 53. 57                     | 1. 21. 46 N                      | — 1                          | — 23                        |
|       | 30          | 17. 56. 20                              | 1. 8. 29. 24                      | 3. 47. 55 S                      | — 7                          | + 23                        |
|       | 31          | 18. 40. 53½                             | 1. 20. 43. 41                     | 4. 27. 27 S                      | — 2                          | + 11                        |
| Aug.  | 14          | 5. 47. 7                                | 7. 21. 4. 0                       | 4. 32. 43 N                      | + 8                          | + 22                        |
|       | 15          | 6. 42. 41                               | 8. 5. 45. 35                      | 5. 3. 9 N                        | + 21                         | + 7                         |
|       | 16          | 7. 39. 5                                | 8. 20. 21. 17                     | 5. 13. 38 N                      | + 18                         | — 2                         |
|       | 17          | 8. 35. 33                               | 9. 4. 48. 21                      | 5. 4. 3 N                        | + 11                         | — 4                         |
|       | 18          | 9. 31. 10                               | 9. 19. 3. 46                      | 4. 35. 59 N                      | + 10                         | — 24                        |
|       | 19          | 10. 25. 3                               | 10. 3. 4. 55                      | 3. 51. 29 N                      | — 8                          | — 25                        |
|       | 21          | 12. 6. 59                               | 11. 0. 16. 20:                    | 1. 48. 18 N                      | — 19:                        | — 27                        |
|       | 22          | 12. 55. 1                               | 11. 13. 25. 6                     | 0. 38. 5 N                       | — 15                         | — 20                        |
|       | 24          | 14. 24. 11                              | 0. 8. 52. 13                      | 1. 40. 35 S                      | + 8                          | + 21                        |
|       | 27          | 16. 35. 3                               |                                   | A.R.                             | + 10                         |                             |
| Sept. | 13          | 6. 31. 14½                              | 9. 0. 28. 11                      | 5. 12. 25 N                      | + 31                         | 0                           |
|       | 14          | 7. 26. 39                               | 9. 14. 39. 33                     | 4. 49. 36 N                      | + 28                         | — 24                        |
|       | 15          | 8. 20. 17                               | 9. 28. 32. 54                     | 4. 9. 48 N                       | + 29                         | — 27                        |
|       | 16          | 9. 11. 44½                              | 10. 12. 8. 51                     | 3. 16. 45 N                      | + 14                         | — 25                        |

|       | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1755  |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Sept. | 17          | 10. 0.55                          | 10.25.28.12             | 2.13.50 N              | + 4                    | — 14                  |
|       | 18          | 10.48. 0                          | 10. 8.32.27             | 1. 5.12 N              | — 6                    | — 21                  |
|       | 27          | 17.35.58                          | 3. 0.21.54              | 5.11.23 S              | + 27                   | — 1                   |
|       | 29          | 19.16. 0                          | 3.26.15. 9              | 4.15.55 S              | + 15                   | — 1                   |
| Oct.  | 1           | 20.59.18                          | 4.23.45.22              | 2.21.14::S             | 0                      | — 6::                 |
|       | 10          | 4.24.46                           | 8.25.37. 3              | 5.12.17 N              | + 22                   | + 2                   |
|       | 15          | 8.45.53                           | 11. 4.24.37             | 1.24.55 N              | + 10                   | — 25                  |
|       | 16          | 9.31.12                           | 11.17.10.44             | 0.16. 2 N              | + 3                    | — 19                  |
|       | 17          | 10.15.13                          | 11.29.45. 6             | 0.52.28 S              | 0                      | + 16                  |
|       | 21          | 13.11.38                          |                         | A.R.                   | + 10                   |                       |
|       | 22          | 13.56.56½                         | 2. 1.13.23              | 4.53.31 S              | + 29                   | + 1                   |
|       | 24          | 15.30.52                          | 2.25.50.36              | 5. 7. 6 S              | + 22                   | + 1                   |
|       | 25          | 16.19.16                          | 3. 8.20. 5              | 4.52.15 S              | + 43                   | + 5                   |
|       | 28          | 18.48. 0½                         | 4.17.23.34              | 2.43.30 S              | + 50                   | — 8                   |
| Nov.  | 9           | 5. 3.40                           | 10. 3.16.47             | 3.37.23 N              | — 7                    | — 12                  |
|       | 10          | 5.55.22                           | 10.17. 1.35             | 2.40. 3 N              | — 14                   | — 20                  |
|       | 11          | 6.43.58                           | 11. 0.18.20             | 1.35.27 N              | — 2                    | — 9                   |
|       | 12          | 7.30. 2                           | 11.13.12. 5             | 0.27.57 N              | — 9                    | — 2                   |
|       | 13          | 8.14.16                           | 11.25.48.37             | 0.39. 8 S              | — 6                    | + 14                  |
|       | 15          | 9.40.19                           | 0.20.30.15              | 2.11.54 S              | — 11                   | + 7                   |
|       | 22          | 15. 4.57                          | 3.16.52.36              | 4.21.38 S              | + 32                   | + 3                   |
|       | 23          | 15.53.56                          | 3.29.37.32              | 3.42. 0 S              | + 39                   | + 4                   |
|       | 25          | 17.31.49½                         | 4.25.51.37              | 1.48.12 S              | + 53                   | — 1                   |
|       | 26          | 18.21. 0½                         | 5. 9.29. 2              | 0.38.27 S              | + 54                   | — 7                   |
| Dec.  | 9           | 5.26. 2                           | 11. 8.28.28             | 0.37.13 N              | — 40                   | — 18                  |
|       | 10          | 6.11.46                           | 11.21.24.53             | 0.31.23 S              | — 39                   | + 2                   |
|       | 14          | 9. 5. 3                           | 1.10.48.54              | 4. 8.16 S              | — 16                   | + 7                   |
|       | 16          | 10.35.14                          | 2. 5.17.59              | 4.55.43 S              | + 4                    | + 9                   |
|       | 20          | 13.51.30½                         | 3.25.39. 7              | 3.44.51 S              | + 32                   | + 16                  |
|       | 21          | 14.40.49                          | 4. 8.36.31              | 2.54. 6 S              | + 19                   | + 15                  |
|       | 23          | 16.18.19                          | 5. 5. 6.43              | 0.44.50 S              | + 6                    | + 25                  |
|       | 27          | 19.38.49                          | 7. 1.42.37              | 3.46.28 N              | + 18                   | — 3                   |
|       | 28          | 20.33.53                          | 7.16.48. 5              | 3.31.17 N              | + 2                    | — 1                   |

|      | DAYS,<br>N. | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lat-<br>itude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------|-------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1756 | S.          | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Jan. | 5           | 3. 16. 19                               |                                   | A.R.                             | — 46                         |                             |
|      | 7           | 4. 50. 32                               | 11. 28. 53. 29                    | 1. 26. 22 S                      | — 51                         | — 1                         |
|      | 10          | 7. 1. 30                                | 1. 6. 17. 13                      | 4. 7. 44 S                       | — 43                         | + 2                         |
|      | 13          | 9. 17. 4                                | 2. 13. 2. 56                      | 5. 6. 31 S                       | — 17                         | + 11                        |
|      | 15          | 10. 54. 12                              | 3. 8. 11. 13                      | 4. 35. 27 S                      | + 12                         | + 13                        |
|      | 16          | 11. 44. 8½                              | 3. 21. 3. 14                      | 3. 58. 18 S                      | + 28                         | + 13                        |
|      | 18          | 13. 26. 30                              | 4. 17. 25. 44                     | 2. 6. 31 S                       | + 24                         | + 23                        |
|      | 19          | 14. 16. 1                               | 5. 0. 54. 49                      | 0. 57. 7 S                       | + 3                          | + 18                        |
|      | 20          | 15. 5. 9                                | 5. 14. 35. 42                     | 0. 16. 47 N                      | — 8                          | — 18                        |
|      | 21          | 15. 54. 14                              | 5. 28. 28. 59                     | 1. 31. 1 N                       | — 20                         | — 20                        |
|      | 23          | 17. 34. 31                              | 6. 26. 55. 18                     | 3. 42. 6 N                       | — 11                         | — 21                        |
|      | 25          | 19. 21. 50                              | 7. 26. 17. 23                     | 5. 0. 38 N                       | — 4                          | — 10                        |
| Feb. | 5           | 4. 11. 52                               | 0. 18. 40. 27                     | 3. 11. 51 S                      | — 35                         | 0                           |
|      | 7           | 5. 39. 52                               | 1. 13. 30. 53                     | 4. 39. 0 S                       | — 35                         | — 3                         |
|      | 8           | 6. 24. 32½                              | 1. 25. 45. 41                     | 5. 3. 37 S                       | — 42                         | — 3                         |
|      | 10          | 7. 57. 21                               | 2. 20. 21. 51                     | 5. 10. 51 S                      | — 45                         | + 4                         |
|      | 11          | 8. 45. 45                               | 3. 2. 52. 50                      | 4. 52. 31 S                      | — 33                         | + 10                        |
|      | 13          | 10. 25. 33                              | 3. 28. 38. 58                     | 3. 32. 54 S                      | 0                            | — 1                         |
|      | 14          | 11. 16. 10                              | 4. 11. 57. 50                     | 2. 33. 30 S                      | + 16                         | 0                           |
|      | 16          | 12. 59. 22                              | 5. 9. 29. 4                       | 0. 8. 1 S                        | + 15                         | + 9                         |
|      | 19          | 15. 31. 32                              | 6. 22. 29. 8                      | 3. 30. 25 N                      | — 20                         | — 12                        |
|      | 21          | 17. 17. 57                              | 7. 21. 50. 21                     | 4. 59. 39 N                      | — 21                         | — 12                        |
|      | 22          | 18. 13. 34                              | 8. 6. 35. 31                      | 5. 16. 10 N                      | — 18                         | — 10                        |
| Mar. | 9           | 6. 37. 3                                | 2. 27. 29. 59                     | 5. 3. 46 S                       | — 40                         | + 1                         |
|      | 12          | 9. 4. 49                                | 4. 5. 47. 1                       | 3. 2. 52 S                       | — 23                         | — 7                         |
|      | 13          | 9. 55. 12                               | 4. 19. 11. 59                     | 1. 57. 46 S                      | — 14                         | — 1                         |
|      | 16          | 12. 30. 40                              | 6. 1. 47. 25                      | 1. 52. 26 N                      | + 32                         | + 4                         |
|      | 20          | 16. 8. 20                               | 8. 1. 54. 35                      | 5. 11. 18 N                      | — 7                          | — 9                         |
| Apr. | 9           | 7. 43. 57                               | 4. 12. 56. 0                      | 2. 23. 16 S                      | — 9                          | — 10                        |
|      | 10          | 8. 33. 30                               | 4. 26. 18. 14                     | 1. 15. 28 S                      | — 20                         | — 11                        |
|      | 11          | 9. 23. 33                               | 5. 10. 7. 25                      | 0. 1. 6 S                        | — 11                         | — 6                         |
|      | 12          | 10. 14. 27                              | 5. 24. 26. 5                      | 1. 15. 42 N                      | — 13                         | + 3                         |
|      | 13          | 11. 6. 35                               | 6. 9. 13. 10                      | 2. 29. 51 N                      | — 2                          | + 4                         |
|      | 14          | 12. 1. 33                               | 6. 24. 25. 39                     | 3. 35. 24 N                      | + 23                         | + 2                         |
|      | 22          | 19. 37. 34                              | 10. 24. 1. 55                     | 1. 23. 8 N                       | — 33                         | — 9                         |



|      | Days, N. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|------|----------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1756 | S.       | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| May  | 7        | 6. 24. 52                         | 4. 20. 34. 37           | 1. 32. 37 S            | + 8                    | — 17                  |
|      | 8        | 7. 13. 15                         | 5. 3. 49. 46            | 0. 23. 31 S            | + 7                    | — 14                  |
|      | 10       | 8. 52. 24 $\frac{1}{2}$           | 6. 1. 45. 56            | 2. 1. 23 S             | — 21                   | + 2                   |
|      | 12       | 10. 38. 44                        | 7. 1. 48. 41            | 4. 3. 47 N             | — 10                   | — 7                   |
|      | 13       | 11. 35. 53                        | 7. 17. 29. 33           | 4. 42. 40 N            | + 1                    | — 10                  |
|      | 15       | 13. 39. 44                        | 8. 19. 20. 33           | 4. 54. 50 N            | + 33                   | — 18                  |
|      | 16       | 14. 41. 37                        | 9. 5. 2. 47             | 4. 27. 10 N            | + 29                   | — 27                  |
|      | 17       | 15. 42. 0                         | 9. 20. 21. 25           | 3. 40. 41 N            | + 8                    | — 29                  |
|      | 20       | 18. 24. 4 $\frac{1}{2}$           | 11. 3. 14. 40           | 0. 20. 38 N            | — 42                   | — 17                  |
|      | 21       | 19. 11. 45                        | 11. 16. 36. 7           | 0. 49. 58 S            | — 55                   | + 7                   |
|      |          |                                   |                         |                        |                        |                       |
| June | 1        | 2. 45. 32                         |                         | A.R.                   | — 11                   |                       |
|      | 3        | 4. 20. 56                         | 4. 16. 4. 1             | 1. 40. 27 S            | + 1                    | — 37                  |
|      | 5        | 5. 55. 39                         | 5. 12. 6. 19            | 0. 35. 54 N            | + 25 :                 | — 2 :                 |
|      | 6        | 6. 43. 39                         | 5. 25. 41. 56           | 1. 45. 38 N            | + 4                    | + 4                   |
|      | 8        | 8. 24. 18 $\frac{1}{2}$           | 6. 24. 21. 56           | 3. 48. 46 N            | — 17                   | — 6                   |
|      | 10       | 10. 15. 59                        | 7. 25. 4. 20            | 4. 57. 15 N            | — 36                   | — 16                  |
|      | 17       | 17. 7. 13                         | 11. 11. 42. 36          | 0. 39. 30 S            | — 39                   | + 13                  |
|      | 18       | 17. 54. 35 $\frac{1}{2}$          | 11. 25. 7. 58           | 1. 48. 46 S            | — 38                   | + 4                   |
|      | 19       | 18. 39. 55                        | 0. 8. 9. 12             | 2. 50. 9 S             | — 44                   | + 2                   |
|      | 20       | 19. 24. 3                         | 0. 20. 51. 36           | 3. 41. 30 S            | — 46                   | — 1                   |
|      | 21       | 20. 7. 47                         | 1. 3. 20. 18            | 4. 21. 17 S            | — 33                   | — 4                   |
|      | 22       | 20. 51. 48                        | 1. 15. 40. 24           | 4. 48. 39 S            | — 25                   | — 27 :                |
|      |          |                                   |                         |                        |                        |                       |
| July | 4        | 5. 28. 0                          | 6. 4. 41. 54            | 2. 42. 28 N            | + 4                    | + 5                   |
|      | 5        | 6. 16. 54                         | 6. 18. 40. 50           | 3. 41. 1 N             | — 2                    | + 2                   |
|      | 6        | 7. 7. 56                          | 7. 3. 6. 14             | 4. 27. 43 N            | — 13                   | — 7                   |
|      | 9        | 9. 59. 15                         | 8. 18. 53. 0            | 4. 56. 12 N            | — 55                   | — 4                   |
|      | 10       | 11. 1. 19                         | 9. 4. 38. 10            | 4. 22. 4 N             | — 49                   | — 26                  |
|      | 11       | 12. 3. 28                         | 9. 20. 20. 2            | 3. 28. 1 N             | — 26                   | — 28                  |
|      | 13       | 14. 3. 20                         |                         | A.R.                   | + 23 :                 |                       |
| Aug. | 1        | 4. 14. 28                         | 6. 14. 19. 8            | 3. 32. 35 N            | — 25                   | + 14                  |
|      | 3        | 5. 55. 21                         | 7. 12. 44. 42           | 4. 57. 49 N            | — 7                    | + 3                   |
|      | 5        | 7. 46. 25                         | 8. 12. 25. 25           | 5. 10. 4 N             | — 21                   | + 1                   |
|      | 6        | 8. 45. 44                         | 8. 27. 37. 51           | 4. 44. 19 N            | — 34                   | — 9                   |
|      | 9        | 11. 14. 47                        | 10. 13. 22. 2           | 1. 40. 31 N            | — 30                   | — 22                  |
|      |          |                                   |                         |                        |                        |                       |

|       | Days, N.S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1756  |            | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Aug.  | 10         | 12. 42. 37                        | 10. 28. 13. 0           | 0. 19. 54 N            | — 7                    | — 16                  |
|       | 12         | 14. 24. 41                        | 11. 26. 40. 51          | 2. 13. 26 S            | + 17                   | + 17                  |
|       | 13         | 15. 12. 8                         | 0. 10. 16. 7            | 3. 17. 9 S             | + 13                   | + 21                  |
|       | 14         | 15. 58. 6                         | 0. 23. 27. 0            | 4. 8. 34 S             | + 27                   | + 17                  |
|       | 15         | 16. 43. 19                        | 1. 6. 17. 28            | 4. 45. 59 S            | + 25                   | + 14                  |
|       | 28         | 2. 11. 55 $\frac{1}{2}$           |                         | A.R.                   | — 7                    |                       |
|       | 31         | 4. 45. 26                         | 7. 22. 56. 40           | 5. 13. 7 N             | — 13                   | + 2                   |
| Sept. | 1          | 5. 40. 36 $\frac{1}{2}$           | 8. 7. 37. 22            | 5. 15. 6 N             | — 1                    | + 11                  |
|       | 2          | 6. 37. 48                         | 8. 22. 25. 20           | 4. 56. 39 N            | + 5                    | + 1                   |
|       | 3          | 7. 36. 14 $\frac{1}{2}$           | 9. 7. 17. 6             | 4. 18. 20 N            | — 6                    | — 6                   |
|       | 6          | 10. 27. 50                        | 10. 21. 34. 35          | 0. 56. 47 N            | — 40                   | — 20                  |
|       | 7          | 11. 20. 53                        | 11. 5. 59. 48           | 0. 22. 39 S            | — 44                   | + 22                  |
|       | 9          | 13. 2. 14                         | 0. 3. 59. 3             | 2. 48. 13 S            | — 12                   | — 21                  |
|       | 11         | 14. 35. 23                        | 1. 0. 38. 3             | 4. 29. 54 S            | + 15                   | + 18                  |
|       | 12         | 15. 21. 9                         | 1. 13. 29. 29           | 4. 59. 17 S            | + 25                   | + 14                  |
|       | 13         | 16. 6. 59                         | 1. 26. 5. 21            | 5. 13. 24 S            | + 38                   | + 11                  |
|       | 14         | 16. 53. 14                        | 2. 8. 29. 43            | 5. 12. 37 S            | + 41                   | + 8                   |
|       | 15         | 17. 40. 4 $\frac{1}{2}$           | 2. 20. 47. 18           | 4. 57. 38 S            | + 32                   | — 5                   |
| Oct.  | 28         | 3. 35. 59 $\frac{1}{3}$           | 8. 3. 6. 6              | 5. 11. 8 N             | + 8                    | + 3                   |
|       | 1          | 6. 29. 18                         | 9. 17. 31. 9            | 3. 35. 49 N            | + 7                    | + 4                   |
|       | 2          | 7. 26. 8                          | 10. 2. 3. 29            | 2. 32. 26 N            | 0                      | — 22                  |
|       | 3          | 8. 21. 0                          | 10. 16. 24. 50          | 1. 20. 17 N            | — 6                    | — 27                  |
|       | 4          | 9. 13. 54                         | 11. 0. 34. 34           | 0. 4. 8 N              | — 26                   | — 24                  |
|       | 5          | 10. 3. 49                         | 11. 14. 30. 41          | 1. 10. 39 S            | — 6                    | + 41                  |
|       | 7          | 11. 39. 20                        | 0. 11. 44. 46           | 3. 20. 47 S            | — 51                   | + 23                  |
|       | 9          | 13. 13. 38                        | 1. 8. 1. 34             | 4. 43. 30 S            | — 4                    | + 1                   |
|       | 11         | 14. 46. 6                         | 2. 3. 22. 9             | 5. 6. 44 S             | + 20                   | + 2                   |
|       | 12         | 15. 32. 58                        | 2. 15. 45. 38           | 4. 56. 24 S            | + 38                   | — 1                   |
|       | 16         | 18. 43. 23                        | 4. 4. 57. 31            | 2. 12. 25 S            | + 32                   | — 36                  |
| Nov.  | 29         | 5. 22. 0 $\frac{1}{2}$            | 9. 27. 41. 47           | 2. 40. 2 N             | — 21                   | — 27                  |
|       | 30         | 6. 17. 46                         | 10. 12. 9. 4            | 1. 30. 6 N             | — 31                   | — 22                  |
|       |            |                                   |                         |                        |                        |                       |
| Nov.  | 1          | 8. 0. 55                          | 11. 10. 6. 25           | 0. 56. 52 S            | — 27                   | + 30                  |
|       | 3          | 9. 35. 27                         | 0. 7. 0. 54             | 3. 5. 29 S             | — 46                   | — 26                  |
|       | 4          | 10. 21. 6                         | 0. 20. 9. 27            | 3. 54. 42 S            | — 57                   | + 24                  |
|       | 5          | 11. 6. 28                         | 1. 3. 6. 47             | 4. 30. 56 S            | — 58                   | + 18                  |
|       | 6          | 11. 52. 4 $\frac{1}{2}$           | 1. 15. 53. 55           | 4. 53. 1 S             | — 53                   | + 8                   |

|              | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|--------------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1756         |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Nov.         | 7           | 12. 38. 13                        | 1. 28. 31. 38           | 5. 0. 6 S              | - 35                   | + 11                  |
|              | 8           | 13. 27. 5                         | 2. 11. 0. 5             | 4. 52. 49 S            | - 19                   | - 3                   |
|              | 10          | 15. 2. 1                          | 3. 5. 35. 3             | 2. 58. 3 S             | + 15                   | + 6                   |
|              | 11          | 15. 49. 37                        | 3. 17. 47. 5            | 3. 13. 50 S            | + 28                   | - 15                  |
|              | 15          | 18. 57. 10                        | 5. 7. 46. 8             | 0. 53. 45 N            | + 47                   | + 17                  |
|              | 27          | 5. 6. 38                          | 10. 21. 42. 5           | 0. 24. 12 N            | - 66                   | - 14                  |
|              | 28          | 5. 58. 39                         | 11. 5. 51. 25           | 0. 50. 32 S            | - 63                   | + 14                  |
| Dec.         | 3           | 9. 49. 29                         | 1. 11. 39. 48           | 4. 51. 54 S            | - 47                   | + 14                  |
|              | 8           | 13. 45. 36                        | 3. 13. 32. 7::          | 3. 19. 28::S           | + 11::                 | + 15::                |
|              | 13          | 17. 37. 41                        |                         | A.R.                   | + 54                   |                       |
|              | 14          | 18. 23. 46                        | 5. 28. 44. 29           | 2. 53. 16 N            | + 58                   | - 51                  |
|              | 16          | 20. 0. 28                         | 6. 26. 28. 55           | 4. 30. 22 N            | + 15                   | - 15                  |
|              | 30          | 7. 48. 11                         | 1. 7. 41. 18            | 4. 57. 9 S             | - 54                   | + 3                   |
| 1757<br>Jan. | 2           | 10. 5. 10                         | 2. 14. 58. 24           | 4. 47. 18 S            | - 39                   | - 3                   |
|              | 3           | 10. 52. 23                        | 2. 27. 13. 48           | 4. 16. 32 S            | - 23                   | - 8                   |
|              | 5           | 12. 30. 7                         | 3. 21. 43. 26           | 2. 41. 4 S             | - 8                    | + 1                   |
|              | 7           | 14. 4. 18                         | 4. 16. 19. 53           | 0. 35. 11 S            | - 4                    | + 4                   |
|              | 16          | 21. 29. 21                        | 8. 19. 32. 46           | 4. 41. 13::N           | - 6                    | - 49::                |
|              | 25          | 4. 58. 20                         | 0. 19. 51. 16           | 4. 26. 14 S            | - 52                   | - 4                   |
|              | 27          | 6. 29. 57                         | 1. 15. 52. 0            | 5. 14. 15 S            | - 40                   | - 3                   |
|              | 29          | 8. 1. 50                          | 2. 10. 47. 43           | 5. 0. 48 S             | - 38                   | - 3                   |
|              | 30          | 8. 48. 43                         | 2. 23. 3. 14            | 4. 33. 0 S             | - 30                   | - 1                   |
| Feb.         | 1           | 10. 24. 2                         | 3. 17. 29. 57           | 3. 2. 17::S            | - 23::                 | - 8::                 |
|              | 3           | 11. 59. 6                         | 4. 12. 9. 42            | 0. 57. 2 S             | + 15                   | - 8                   |
|              | 6           | 14. 19. 28                        | 5. 20. 12. 57::         | 2. 27. 54 N            | - 18::                 | + 3                   |
|              | 7           | 15. 5. 3                          | 6. 3. 17. 23            | 3. 27. 51 N            | - 24::                 | - 10                  |
|              | 23          | 4. 22. 44                         | 1. 10. 26. 33           | 5. 9. 47 S             | - 20                   | + 5                   |
|              | 25          | 5. 56. 10                         | 2. 6. 1. 15             | 5. 7. 58 S             | - 27                   | - 3                   |
|              | 27          | 7. 30. 42                         | 3. 0. 41. 27            | 4. 8. 53 S             | - 28                   | + 1                   |
|              | 28          | 8. 18. 25                         | 3. 12. 54. 1::          | 3. 22. 12::S           | - 22::                 | - 19::                |
| Mar.         | 1           | 9. 6. 10                          | 3. 25. 8. 30            | 2. 25. 45 S            | - 23                   | - 12                  |
|              | 2           | 9. 53. 41                         | 4. 7. 28. 49            | 1. 22. 16 S            | - 15                   | - 12                  |
|              | 4           | 11. 27. 22                        | 5. 2. 40. 32            | 0. 55. 35 N            | + 17                   | + 14                  |
|              | 5           | 12. 14. 42                        | 5. 15. 37. 14           | 2. 3. 57 N             | + 28                   | 0                     |
|              | 7           | 13. 48. 43                        | 6. 12. 16. 53           | 3. 59. 58 N            | 0                      | + 10                  |



|      | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1757 |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Mar. | 10          | 16. 17. 26                        | 7. 24. 7.50             | 5. 13. 14 N            | — 7                    | — 6                   |
|      | 11          | 17. 11. 30                        | 8. 8. 31.53             | 5. 0. 54 N             | — 25                   | — 12                  |
|      | 13          | 19. 6. 10                         | 9. 7. 51.10             | 3. 58. 56 N            | — 7                    | + 7                   |
|      | 26          | 5. 23. 25                         | 2. 25. 40.34            | 4. 16. 34 S            | — 21                   | + 6                   |
|      | 27          | 6. 11. 22                         | 3. 7. 57.40             | 3. 33. 59 S            | — 18                   | — 2                   |
|      | 28          | 6. 59. 11                         | 3. 20. 10.47            | 2. 41. 28 S            | — 28                   | — 2                   |
|      | 29          | 7. 46. 39 <sup>1</sup>            | 4. 2. 25.25             | 1. 41. 36 S            | — 35                   | — 6                   |
| Apr. | 3           | 11. 40. 3                         | 6. 6. 51.11             | 3. 38. 46 N            | + 32                   | + 11                  |
|      | 4           | 12. 30. 20                        | 6. 20. 43.38            | 4. 23. 57 N            | + 56                   | — 11                  |
|      | 5           | 13. 20. 11                        | 7. 4. 54.24             | 4. 53. 19 N            | + 30                   | + 5                   |
|      | 6           | 14. 12. 12                        | 7. 19. 20.22            | 5. 4. 54 N             | + 11                   | + 13                  |
|      | 12          | 19. 53. 45                        | 10. 17. 27.50           | 0. 16. 28 N            | — 34                   | — 4                   |
|      | 26          | 6. 26. 33                         | 4. 9. 36. 6             | 0. 50. 44 S            | — 18                   | — 28                  |
|      | 27          | 7. 12. 51                         | 4. 21. 56.46            | 0. 14. 47 N            | — 27                   | + 19                  |
|      | 28          | 7. 58. 41                         | 5. 4. 30.40             | 1. 20. 26 N            | — 27                   | + 25                  |
|      | 29          | 8. 44. 29                         | 5. 17. 23.22            | 2. 23. 40 N            | — 25                   | + 17                  |
|      | 30          | 9. 30. 46                         | 6. 0. 39.18             | 3. 20. 57 N            | — 19                   | + 9                   |
| May  | 1           | 10. 18. 12 <sup>1</sup>           | 6. 14. 21.25            | 4. 8. 28 N             | 0                      | + 9                   |
|      | 3           | 12. 0. 27                         | 7. 13. 4.47             | 4. 59. 20 N            | + 33                   | — 5                   |
|      | 6           | 14. 53. 24 <sup>1</sup>           | 8. 28. 16.57            | 3. 50. 7 N             | + 9                    | — 17                  |
|      | 8           | 16. 53. 2                         | 9. 28. 23. 8            | 1. 40. 57 N            | — 35                   | — 19                  |
|      | 10          | 18. 44. 44                        | 10. 27. 37.40           | 0. 51. 48 S            | — 51                   | + 5                   |
|      | 29          | 8. 55. 44                         | 6. 21. 39.17            | 4. 36. 54 N            | — 30                   | — 5                   |
| June | 1           | 11. 35. 40                        | 8. 5. 50.48             | 4. 45. 4 N             | — 7                    | — 14                  |
|      | 2           | 12. 38. 6                         | 8. 21. 21.17            | 4. 6. 40 N             | + 11                   | — 26                  |
|      | 3           | 13. 40. 8                         | 9. 6. 57.44             | 3. 9. 32 N             | + 10                   | — 29                  |
|      | 23          | 5. 17. 27                         | 5. 19. 37. 7            | 3. 0. 35 N             | — 12                   | + 30                  |
|      | 24          | 6. 1. 46 <sup>1</sup>             | 6. 2. 24.23             | 3. 52. 36 N            | — 1                    | + 7                   |
|      | 25          | 6. 47. 8                          | 6. 15. 35.14            | 4. 33. 26 N            | — 21                   | + 13                  |
|      | 26          | 7. 34. 27                         | 6. 29. 14.10            | 5. 0. 56 N             | — 30                   | + 4                   |
|      | 27          | 8. 24. 38                         | 7. 13. 24.39            | 5. 11. 17 N            | — 44                   | + 3                   |
| July | 2           | 13. 26. 32                        | 10. 0. 38.22            | 1. 11. 21 N            | + 6                    | — 35                  |
|      | 5           | 15. 18. 26                        | 11. 16. 27.18           | 2. 49. 55 S            | — 16                   | + 12                  |
|      | 7           | 17. 57. 18                        | 0. 14. 48.59            | 4. 35. 11 S            | — 8                    | + 3                   |
|      | 9           | 19. 30. 36                        | 1. 11. 34.46            | 5. 14. 16 S            | — 22                   | — 13                  |

|       | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1757  |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| July  | 12          | 21. 51. 41                        |                         | A. R.                  | — 1                    |                       |
|       | 24          | 6. 15. 50 $\frac{1}{2}$           | 7. 7. 29. 5             | 5. 15. 21 N            | — 11                   | + 10                  |
|       | 28          | 9. 59. 43                         | 9. 6. 31. 59            | 3. 11. 24 N            | — 70                   | — 19                  |
|       | 30          | 12. 5. 25                         | 10. 8. 8. 37            | 0. 29. 45 N            | — 44                   | — 21                  |
|       | 31          | 13. 8. 14                         | 10. 23. 55. 55          | 0. 58. 0 S             | + 11                   | + 3                   |
| Aug.  | 1           | 14. 5. 22                         | 11. 9. 26. 1            | 2. 19. 33 S            | + 23                   | + 5                   |
|       | 2           | 14. 59. 9                         | 11. 24. 32. 0           | 3. 29. 15 S            | + 26                   | + 3                   |
|       | 6           | 18. 13. 59                        | 1. 20. 10. 36           | 5. 15. 50 S            | — 1                    | + 2                   |
|       | 7           | 19. 1. 16                         | 2. 3. 3. 14             | 4. 59. 53 S            | + 10                   | — 14                  |
|       | 25          | 8. 44. 22 $\frac{1}{2}$           | 9. 14. 41. 52::         | 2. 33. 29 N            | — 68::                 | — 75::                |
|       | 28          | 11. 45. 13                        | 11. 1. 19. 15           | 1. 36. 52 S            | — 53                   | — 19                  |
|       | 29          | 12. 43. 34                        | 11. 16. 47. 45          | 2. 53. 40 S            | — 6                    | + 6                   |
|       | 30          | 13. 36. 55                        | 0. 1. 57. 8             | 3. 56. 15 S            | + 13                   | + 7                   |
|       | 31          | 14. 28. 8                         | 0. 15. 42. 3            | 4. 41. 16 S            | + 22                   | + 4                   |
| Sept. | 1           | 15. 17. 50                        | 1. 0. 58. 34            | 5. 7. 9 S              | + 29                   | + 2                   |
|       | 3           | 16. 55. 10                        | 11. 28. 5. 49:          | 5. 3. 44 S             | + 28:                  | — 2                   |
|       | 18          | 3. 48. 13 $\frac{1}{2}$           | 7. 26. 9. 48            | 5. 0. 29: N            | + 2                    | + 22:                 |
|       | 19          | 4. 40. 53                         | 8. 10. 10. 51           | 4. 34. 0: N            | + 5                    | + 18:                 |
|       | 20          | 5. 36. 20                         | 8. 24. 27. 51           | 3. 50. 2 N             | + 16                   | + 21                  |
|       | 23          | 8. 32. 9                          | 10. 8. 49. 55           | 0. 20. 2 N             | — 41                   | — 13                  |
|       | 26          | 11. 19. 50 $\frac{1}{2}$          | 11. 24. 19. 38          | 3. 25. 14 S            | — 63                   | + 26                  |
|       | 30          | 14. 44. 54                        | 1. 22. 3. 13            | 5. 1. 8 S              | + 4                    | + 7                   |
| Oct.  | 2           | 16. 24. 8 $\frac{1}{2}$           | 2. 18. 26. 50           | 4. 5. 17 S             | + 29                   | + 11                  |
|       | 3           | 17. 13. 31                        | 3. 1. 6. 18             | 3. 19. 10 S            | + 27                   | + 1                   |
|       | 18          | 4. 29. 19                         | 9. 4. 37. 57:           | 2. 56. 41:: N          | + 6:                   | — 14::                |
|       | 19          | 5. 27. 29                         | 9. 19. 11. 38           | 1. 48. 48 N            | — 7                    | — 9                   |
|       | 20          | 6. 25. 26                         | 10. 3. 50. 0            | 0. 33. 40 N            | — 9                    | — 20                  |
|       | 23          | 9. 9. 50                          | 11. 17. 59. 14          | 3. 5. 38 S             | — 60                   | + 28                  |
|       | 24          | 10. 1. 9                          | 0. 2. 39. 4             | 3. 59. 45 S            | — 78                   | + 25                  |
|       | 25          | 10. 51. 25                        | 0. 17. 10. 58           | 4. 37. 36 S            | — 78                   | + 25                  |
|       | 28          | 13. 23. 18                        | 1. 29. 15. 51           | 4. 42. 18 S            | — 30                   | + 16                  |
|       | 30          | 15. 3. 9                          | 2. 25. 35. 30           | 3. 26. 43 S            | — 16                   | + 10                  |
|       | 31          | 15. 53. 56                        | 3. 8. 15. 27            | 2. 33. 28 S            | + 29                   | 0                     |
| Nov.  | 1           | 16. 42. 59                        | 3. 20. 40. 18           | 1. 33. 34 S            | + 31                   | + 4                   |
|       | 3           | 18. 17. 20                        | 4. 15. 5. 23            | 0. 34. 22 N            | + 31                   | + 5                   |

|              | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|--------------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1757         |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Nov.         | 5           | 19. 47. 2                         | 5. 9. 38. 21            | 2. 36. 25 N            | + 22                   | + 22                  |
|              | 7           | 21. 15. 30                        | 5. 5. 5. 40             | 4. 12. 0 N             | + 45                   | + 41::                |
|              | 16          | 4 21. 1                           | 9. 29. 25. 53           | 0. 41. 0 N             | - 36                   | - 7                   |
|              | 17          | 5. 18. 29½                        | 10. 14 10. 22           | 0. 37. 6 S             | - 49                   | + 14                  |
|              | 20          | 7. 56. 37                         | 11. 27. 39. 38          | 3. 54. 34 S            | - 52                   | + 31                  |
|              | 21          | 8. 45. 45                         | 0. 11. 53. 2            | 4. 34. 40 S            | - 56                   | + 23                  |
|              | 23          | 10. 22. 51                        | 1. 9. 49. 22            | 5. 2. 21 S             | - 66                   | + 25                  |
|              | 24          | 11. 11. 58                        | 1. 23. 28. 36           | 4. 49. 53 S            | - 67                   | + 20                  |
|              | 26          | 12. 54. 24                        | 2. 20. 1. 51            | 3. 39. 23 S            | - 45                   | + 9                   |
|              | 27          | 13. 44. 53                        | 3. 2. 53. 10            | 2. 46. 45 S            | - 27                   | + 5                   |
| Dec.         | 4           | 19. 7. 57                         | 5. 29. 16. 32           | 4. 8. 3 N              | + 22                   | 0                     |
|              | 5           | 19. 51. 57                        | 6. 12. 8. 15            | 4. 42. 29 N            | + 22                   | 0                     |
|              | 17          | 5. 54. 43                         | 11. 23. 22. 53          | 3. 52. 55 S            | - 59                   | + 12                  |
|              | 18          | 6. 44. 7                          | 0. 7. 38. 15            | 4. 36. 30 S            | - 47                   | + 11                  |
|              | 26          | 10. 45. 40½                       | 2. 15. 7. 54            | 3. 57. 28 S            | - 35                   | + 6                   |
|              | 27          | 14. 5. 19                         | 4. 5. 23. 30            | 0. 5. 26 S             | - 11                   | + 4                   |
| 1758<br>Jan. | 2           | 18. 29. 14                        | 6. 19. 26. 0            | 5. 5. 10 N             | + 15                   | - 2                   |
|              | 13          | 3. 47. 56                         | 11. 17. 53. 29          | 3. 38. 59 S            | - 43                   | + 2                   |
|              | 15          | 5. 29. 32                         | 0. 17. 8. 38            | 5. 3. 23 S             | - 51                   | - 2                   |
|              | 16          | 6. 17. 55                         | 1. 1. 8. 29             | 5. 17. 10 S            | - 41                   | - 10                  |
|              | 19          | 8. 42. 35                         | 2. 11. 1. 27            | 4. 15. 3 S             | - 3                    | - 13                  |
|              | 26          | 14. 17. 40                        | 5. 7. 39. 42            | 2. 55. 9 N             | 0                      | - 1:                  |
|              | 30          | 17. 8. 59½                        | 6. 27. 24. 58           | 5. 15. 40 N            | + 12                   | - 20                  |
| Feb.         | 1           | 18. 42. 53                        | 7. 23. 57. 10:          | 4. 59. 10 N            | + 9:                   | - 10                  |
|              | 11          | 3. 20. 14                         | 0. 10. 55. 44           | 4. 50. 36 S            | - 8                    | - 21                  |
|              | 13          | 5. 0. 46                          | 1. 9. 50. 36            | 5. 14. 20 S            | - 25                   | - 8                   |
|              | 15          | 6. 39. 16                         | 2. 6. 50. 10            | 4. 26. 2 S             | - 18                   | - 10                  |
|              | 16          | 7. 28. 40                         | 2. 19. 44. 48:          | 3. 41. 18::S           | - 1:                   | - 13::                |
|              | 17          | 8. 18. 9                          | 3. 2. 22. 30            | 2. 46. 42 S            | - 2                    | - 12                  |
|              | 18          | 9. 7. 21                          | 3. 14. 47. 23           | 1. 45. 11 S            | - 5                    | - 16                  |
|              | 20          | 10. 43. 8                         | 4. 9. 15. 30            | 0. 27. 31 N            | + 5                    | + 12                  |
|              | 27          | 15. 51. 34                        | 7. 6. 7. 8              | 5. 11. 20 N            | + 8                    | - 15                  |
| Mar.         | 1           | 17. 27. 21                        | 8. 2. 38. 31            | 4. 32. 43 N            | + 9                    | - 21                  |
|              | 3           | 19. 16. 4                         | 9. 0. 39. 50            | 2. 49. 50 N            | - 1                    | - 23                  |
|              | 15          | 5. 22. 13                         | 2. 14. 53. 57           | 3. 49. 24 S            | - 12                   | - 6                   |



|      | Days, N. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|------|----------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1758 |          | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Mar. | 16       | 6. 12. 49                         | 2. 27. 52. 17           | 2. 57. 18 S            | — 4                    | — 9                   |
|      | 17       | 7. 2. 52                          | 3. 10. 30. 21           | 1. 57. 56 S            | — 23                   | — 19                  |
|      | 23       | 11. 37. 49                        | 5. 24. 0. 38            | 3. 58. 8 N             | + 30                   | — 1                   |
|      | 24       | 12. 22. 36                        | 6. 6. 31. 23            | 4. 33. 54 N            | + 65                   | — 32                  |
|      |          |                                   |                         | A.R.                   | + 46                   |                       |
|      | 26       | 13. 49. 59                        | 7. 2. 5. 17             | 5. 3. 14 N             | + 45                   | — 9                   |
|      | 28       | 15. 24. 24                        | 7. 28. 30. 9            | 4. 31. 5 N             | + 7                    | — 10                  |
|      | 29       | 16. 15. 37                        | 8. 12. 4. 23            | 3. 51. 30 N            | 0                      | — 15                  |
|      | 30       | 17. 9. 42                         | 8. 25. 55. 0            | 2. 57. 33 N            | + 1                    | — 17                  |
|      | 31       | 18. 6. 12                         | 9. 10. 3. 30            | 1. 51. 33 N            | — 1                    | — 11                  |
|      |          |                                   |                         |                        |                        |                       |
| Apr. | 13       | 4. 54. 47                         | 3. 5. 22. 51            | 2. 8. 0 S              | — 6                    | — 21                  |
|      | 14       | 5. 45. 22                         | 3. 18. 4. 31            | 1. 4. 19 S             | — 11                   | — 19                  |
|      | 16       | 7. 21. 39 <sup>1</sup>            | 4. 12. 44. 11           | 1. 5. 39 N             | — 11                   | + 10                  |
|      | 19       | 9. 34. 25                         | 5. 19. 23. 25           | 3. 48. 48 N            | — 3                    | + 12                  |
|      | 20       | 10. 17. 9 <sup>1</sup>            | 6. 1. 51. 4             | 4. 25. 45 N            | + 16                   | + 12                  |
|      | 22       | 11. 44. 20                        | 6. 27. 27. 36           | 4. 59. 50 N            | + 41                   | + 9                   |
| May  | 1        | 19. 48. 15                        | 11. 3. 56. 52           | 2. 55. 38 S            | — 45                   | + 5                   |
|      | 2        | 20. 41. 27 <sup>1</sup>           | 11. 18. 49. 40          | 3. 52. 47 S            | — 57                   | + 18                  |
|      | 10       | 2. 43. 35                         | 2. 29. 31. 38           | 2. 22. 57 S            | — 9                    | — 31                  |
|      | 11       | 3. 35. 44                         | 3. 12. 35. 19           | 1. 18. 5 S             | — 2                    | — 14                  |
|      | 12       | 4. 26. 24                         | 3. 25. 18. 25           | 0. 11. 20 S            | + 6                    | — 30                  |
|      | 13       | 5. 15. 7                          | 4. 7. 45. 37            | 0. 54. 52 N            | — 6                    | + 32                  |
|      | 14       | 6. 1. 44                          | 4. 20. 1. 53            | 1. 57. 44 N            | — 10                   | + 25                  |
|      | 16       | 7. 29. 47                         | 5. 14. 26. 21           | 3. 43. 57 N            | — 23                   | + 19                  |
|      | 17       | 8. 12. 22                         | 5. 26. 46. 20           | 4. 23. 5 N             | — 23                   | + 18                  |
|      | 18       | 8. 54. 57 <sup>1</sup>            | 6. 9. 18. 29            | 4. 50. 24 N            | — 14                   | + 12                  |
|      | 19       | 9. 38. 24                         | 6. 22. 6. 54            | 5. 3. 48 N             | — 6                    | + 7                   |
|      | 23       | 12. 58. 5                         | 8. 16. 36. 23           | 3. 16. 29 N            | + 8                    | — 15                  |
|      | 26       | 15. 52. 8                         | 10. 0. 6. 31            | 0. 20. 28 S            | — 39                   | + 22                  |
|      | 28       | 17. 44. 59                        | 10. 29. 30. 55          | 2. 49. 25 S            | — 60                   | + 15                  |
| June | 9        | 3. 7. 19                          | 4. 2. 34. 14            | 0. 37. 31 N            | — 7                    | + 41                  |
|      |          |                                   |                         | A.R.                   | + 2                    |                       |
|      | 10       | 3. 55. 15                         | 4. 14. 59. 52           | 1. 43. 35 N            | — 4                    | + 35                  |
|      |          |                                   |                         | A.R.                   | + 6                    |                       |
|      | 13       | 6. 7. 25                          | 5. 21. 40. 39           | 4. 19. 36 N            | — 11                   | + 21                  |
|      | 14       | 6. 49. 29                         | 6. 4. 0. 48             | 4. 50. 48 N            | — 18                   | + 28                  |
|      |          |                                   |                         | A.R.                   | — 2                    |                       |

|       | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1758  |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| June  |             |                                   |                         | A.R.                   | — 2                    |                       |
|       | 17          | 9. 1. 35                          | 7. 12. 35. 19           | 4. 59. 25 N            | — 27                   | + 1                   |
|       | 18          | 9. 50. 38                         | 7. 26. 13. 5            | 4. 29. 22 N            | — 29                   | + 1                   |
|       | 19          | 10. 43. 21                        | 8. 10. 15. 5            | 3. 42. 40 N            | — 17                   | — 14                  |
|       | 20          | 11. 39. 43 $\frac{1}{2}$          | 8. 24. 40. 57           | 2. 40. 36 N            | — 26                   | — 23                  |
|       | 22          | 13. 41. 55                        | 9. 24. 26. 37           | 0. 4. 54 N             | — 15                   | — 30                  |
|       | 23          | 14. 41. 49                        | 10. 9. 32. 15           | 1. 17. 31 S            | — 26                   | + 29                  |
|       | 26          | 17. 26. 56                        | 11. 24. 27. 33          | 4. 30. 55 S            | — 49                   | + 21                  |
|       | 28          | 19. 6. 40                         | 0. 23. 30. 4            | 5. 15. 33 S            | — 27                   | + 1                   |
| July  | 16          | 8. 29. 46 $\frac{1}{2}$           | 8. 3. 31. 2             | 4. 9. 31 S             | — 60                   | 0                     |
|       | 17          | 9. 23. 46                         | 8. 17. 36. 20           | 3. 15. 2 N             | — 47                   | — 55                  |
|       |             |                                   |                         | A.R.                   | — 56                   |                       |
|       | 19          | 11. 22. 16                        | 9. 17. 11. 30           | 0. 44. 42 N            | — 44                   | — 21                  |
|       | 24          | 16. 12. 51                        | 0. 4. 7. 15             | 4. 55. 58 S            | — 6                    | + 10                  |
|       | 25          | 17. 3. 38                         | 0. 18. 55. 56           | 5. 15. 22 S            | — 11                   | — 3                   |
|       | 26          | 17. 53. 29                        | 1. 3. 22. 36            | 5. 13. 59 S            | — 16                   | — 3                   |
|       | 29          | 20. 24. 11                        | 2. 14. 34. 19           | 3. 27. 13 S            | + 23                   | — 32                  |
| Aug.  | 11          | 5. 32. 31                         | 7. 14. 28. 14           | 4. 56. 35 N            | + 30                   | + 7                   |
|       | 12          | 6. 19. 41                         | 7. 27. 33. 2            | 4. 25. 15 N            | + 20                   | + 5                   |
|       | 17          | 11. 5. 12                         | 10. 10. 0. 15           | 1. 20. 45 S            | — 56                   | + 28                  |
|       | 18          | 12. 6. 40                         | 10. 25. 44. 33          | 2. 39. 59 S            | — 21                   | + 21                  |
|       | 20          | 14. 1. 26                         | 11. 27. 20. 24          | 4. 36. 46 S            | + 22                   | + 8                   |
|       | 21          | 14. 54. 50 $\frac{1}{2}$          | 0. 12. 49. 50           | 5. 5. 5 S              | + 20                   | — 1                   |
|       | 22          | 15. 46. 49                        | 0. 27. 55. 47           | 5. 11. 18 S            | + 9                    | — 7                   |
|       | 23          | 16. 38. 6 $\frac{1}{2}$           | 1. 12. 33. 46           | 4. 56. 42 S            | — 1                    | — 3                   |
| Sept. | 9           | 5. 2. 57                          | 8. 5. 52. 46            | 3. 47. 33 N            | + 39                   | + 6                   |
|       | 10          | 5. 54. 26                         | 8. 19. 16. 11           | 2. 53. 33 N            | + 43                   | + 6                   |
|       | 12          | 7. 47. 2                          | 9. 17. 24. 5            | 0. 33. 34 N            | — 20                   | — 8                   |
|       | 15          | 10. 44. 39                        | 11. 3. 7. 11            | 3. 14. 18 S            | + 64                   | + 16                  |
|       | 16          | 11. 41. 37                        | 11. 18. 58. 52          | 4. 11. 2 S             | — 50                   | + 12                  |
|       | 17          | 12. 39. 14                        | 0. 4. 53. 16            | 4. 48. 26 S            | — 18                   | + 5                   |
|       | 18          | 13. 33. 14                        | 0. 20. 35. 23           | 5. 3. 27 S             | 0                      | — 3                   |
|       | 19          | 14. 26. 32 $\frac{1}{2}$          | 1. 5. 55. 50            | 4. 56. 4 S             | + 14                   | — 4                   |
|       | 20          | 15. 19. 40                        | 1. 20. 27. 43           | 4. 28. 45 S            | + 6                    | — 11                  |
|       | 21          | 16. 12. 51                        | 2. 5. 7. 28             | 3. 45. 8 S             | + 2                    | — 12                  |
|       | 23          | 17. 58. 47                        | 3. 2. 14. 49            | 1. 46. 44 S            | + 6                    | — 10                  |

|              | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|--------------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1758         |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Sept.        | 25          | 19. 40. 45                        | 3. 27. 46. 31           | 0. 26. 48 N            | + 16                   | + 15                  |
|              | 26          | 20. 29. 0                         | 4. 10. 9. 31            | 1. 31. 25 N            | + 45                   | + 1                   |
| Oct.         | 9           | 5. 37. 53                         | 9. 12. 2. 41            | 0. 47. 1 N             | + 29                   | — 3                   |
|              | 10          | 6. 34. 48                         | 9. 26. 10. 15           | 0. 27. 25 S            | + 12                   | + 9                   |
|              | 11          | 7. 32. 14                         | 10. 10. 42. 16          | 1. 42. 10 S            | — 5                    | + 13                  |
|              | 12          | 8. 29. 14                         | 10. 25. 39. 31          | 2. 52. 0 S             | — 56                   | + 15                  |
|              | 13          | 9. 25. 9                          | 11. 10. 57. 53          | 3. 51. 9 S             | — 63                   | + 15                  |
|              | 14          | 10. 19. 57                        | 11. 26. 32. 27          | 3. 34. 12 S            | — 77                   | + 17                  |
|              | 15          | 11. 13. 58                        | 0. 12. 13. 46           | 4. 56. 55 S            | — 69                   | + 20                  |
|              | 16          | 12. 10. 2                         | 0. 27. 52. 9            | 4. 57. 35 S            | — 45                   | + 5                   |
|              | 17          | 13. 4. 4 $\frac{1}{2}$            | 1. 13. 14. 6            | 4. 36. 23 S            | — 28                   | + 2                   |
|              | 19          | 14. 53. 37                        | 2. 12. 40. 0            | 3. 2. 19 S             | — 8                    | — 2                   |
|              | 21          | 16. 42. 22 $\frac{1}{2}$          | 3. 10. 2. 40            | 0. 50. 55 S            | + 7                    | — 10                  |
|              | 26          | 20. 40. 6                         | 5. 12. 28. 26           | 4. 1. 14 N             | + 34                   | + 3                   |
| Nov.         | 5           | 3. 33. 47                         | 9. 7. 52. 34            | 0. 53. 51 N            | — 13                   | + 12                  |
|              | 8           | 6. 21. 41                         | 10. 20. 15. 4           | 2. 42. 57 S            | — 14                   | + 7                   |
|              | 9           | 7. 16. 0                          | 11. 4. 55. 9            | 4. 43. 2 S             | — 24                   | + 8                   |
|              | 12          | 9. 53. 24                         | 0. 20. 12. 35           | 5. 4. 15 S             | — 55                   | + 19                  |
|              | 13          | 10. 46. 5                         | 1. 5. 26. 22            | 4. 50. 0 S             | — 60                   | + 21                  |
|              | 15          | 12. 37. 15                        | 2. 5. 20. 11            | 3. 24. 37 S            | — 35                   | + 9                   |
|              | 16          | 13. 33. 7                         | 2. 19. 44. 40           | 2. 21. 25 S            | — 21                   | + 10                  |
|              | 20          | 17. 5. 10 $\frac{1}{2}$           | 4. 13. 0. 27            | 2. 15. 18 N            | + 21                   | — 2                   |
|              | 21          | 17. 51. 50                        | 4. 25. 27. 6            | 3. 11. 54 N            | + 17                   | + 8                   |
|              | 22          | 18. 36. 3                         | 5. 7. 43. 5             | 3. 59. 10 N            | + 27                   | — 2                   |
|              | 23          | 19. 18. 29 $\frac{1}{2}$          | 5. 19. 54. 41           | 4. 35. 7 N             | + 24                   | 0                     |
|              | 24          | 19. 59. 58                        | 6. 2. 7. 33             | 4. 58. 41 N            | + 26                   | — 5                   |
| Dec.         | 7           | 6. 5. 10                          | 11. 15. 3. 46           | 4. 27. 34 S            | — 37                   | + 10                  |
|              | 8           | 6. 56. 11                         | 11. 29. 45. 21          | 4. 59. 57 S            | — 28                   | + 14                  |
|              | 13          | 11. 16. 8                         | 2. 12. 55. 40           | 2. 51. 50 S            | — 35                   | + 5                   |
|              | 16          | 14. 3. 43                         | 3. 24. 14. 11           | 0. 45. 18 N            | — 7                    | 0                     |
|              | 18          | 15. 44. 4                         | 4. 20. 2. 5             | 2. 56. 58 N            | + 24                   | + 1                   |
| 1759<br>Jan. | 2           | 3. 7. 29                          | 10. 25. 38. 25          | 3. 22. 38 S            | — 53                   | + 11                  |
|              | 3           | 4. 1. 48                          | 11. 10. 31. 11          | 4. 18. 28 S            | — 54                   | + 11                  |
|              | 6           | 6. 34. 3                          | 0. 24. 42. 33           | 5. 13. 30 S            | — 21                   | + 3                   |
|              | 8           | 8. 15. 11                         | 1. 23. 26. 33           | 4. 12. 7 S             | + 10                   | — 13                  |



|      | D. M. S. | Mean Time<br>of Transit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------|----------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1759 | N.       | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Jan. | 12       | 11. 50. 34                              | 3. 13. 29. 52                     | 0. 13. 43 N                      | — 11                         | + 18                        |
|      | 13       | 12. 45. 27                              | 4. 1. 40. 23                      | 1. 25. 42 N                      | — 12                         | + 10                        |
|      | 14       | 13. 35. 35                              | 4. 14. 34. 28                     | 2. 31. 50 N                      | — 10                         | + 5                         |
|      | 16       | 15. 7. 38                               | 5. 9. 41. 12                      | 4. 15. 18 N                      | + 20                         | + 3                         |
|      | 17       | 15. 50. 16                              | 5. 21. 59. 13                     | 4. 49. 13 N                      | + 33                         | — 3                         |
|      | 18       | 16. 31. 35                              | 6. 4. 12. 6                       | 5. 9. 44 N                       | + 35                         | — 7                         |
|      | 19       | 17. 12. 28                              | 6. 16. 24. 32                     | 5. 16. 18 N                      | + 27                         | — 16                        |
|      | 20       | 17. 53. 51                              | 6. 28. 41. 39                     | 5. 8. 25 N                       | + 24                         | — 6                         |
|      | 21       | 18. 36. 42                              | 7. 11. 9. 7                       | 4. 45. 58 N                      | + 20                         | — 8                         |
|      | 22       | 19. 22. 1                               | 7. 23. 52. 41                     | 4. 9. 30 N                       | + 16                         | — 22                        |
| Feb. | 3        | 5. 21. 16                               | 1. 4. 45. 56                      | 4. 56. 8 S                       | — 32                         | — 4                         |
|      | 7        | 8. 50. 50 $\frac{1}{2}$                 | 3. 0. 35. 55                      | 1. 21. 44 S                      | 0                            | — 28                        |
|      | 11       | 12. 16. 23                              | 4. 2. 25. 1                       | 3. 6. 12 N                       | — 15                         | + 14                        |
| Mar. | 5        | 5. 52. 54                               | 2. 12. 45. 27                     | 2. 38. 53 S                      | — 26                         | — 22                        |
|      | 6        | 6. 47. 3                                | 2. 26. 29. 51                     | 1. 32. 6 S                       | — 30                         | — 19                        |
|      | 7        | 7. 40. 50                               | 3. 9. 51. 16                      | 0. 22. 15 S                      | — 26                         | — 25                        |
|      | 9        | 9. 24. 7                                | 4. 5. 40. 45                      | 1. 52. 34 N                      | — 4                          | + 26                        |
|      | 10       | 10. 12. 27                              | 4. 18. 16. 29                     | 2. 51. 24 N                      | — 20                         | — 18                        |
|      | 11       | 10. 58. 22                              | 5. 0. 43. 16                      | 3. 41. 10 N                      | — 18                         | + 13                        |
|      | 12       | 11. 42. 7                               | 5. 13. 3. 45                      | 4. 19. 57 N                      | — 24                         | + 8                         |
|      | 13       | 12. 26. 15 $\frac{1}{2}$                | 5. 25. 20. 37                     | 4. 46. 29 N                      | + 2                          | — 2                         |
|      | 16       | 14. 29. 31                              | 7. 2. 0. 54                       | 4. 44. 23 N                      | + 19                         | — 19                        |
|      | 17       | 15. 12. 7                               | 7. 14. 19. 10                     | 4. 16. 39 N                      | + 17                         | — 20                        |
| Apr. | 2        | 4. 38. 51                               | 2. 21. 20. 50                     | 1. 42. 24 S                      | — 3                          | — 18                        |
|      | 5        | 7. 20. 58                               | 4. 1. 37. 10                      | 1. 46. 3 N                       | — 24                         | + 18                        |
|      | 7        | 8. 56. 53                               | 4. 26. 47. 23                     | 3. 36. 16 N                      | — 31                         | + 3                         |
|      | 10       | 11. 4. 32                               | 6. 3. 33. 24                      | 4. 57. 29 N                      | — 5                          | + 5                         |
|      | 12       | 12. 28. 26                              | 6. 28. 2. 22                      | 4. 45. 24 N                      | — 1                          | — 13                        |
|      | 13       | 13. 10. 42                              | 7. 10. 21. 59                     | 4. 18. 57 N                      | + 23                         | — 16                        |
|      | 14       | 13. 54. 45                              | 7. 22. 47. 33                     | 3. 39. 59 N                      | + 11                         | — 22                        |
|      | 15       | 14. 41. 9                               | 8. 5. 21. 18                      | 2. 49. 41 N                      | — 28                         | — 18                        |
|      | 17       | 16. 21. 56 $\frac{1}{2}$                | 9. 1. 5. 26                       | 0. 43. 47 N                      | — 21                         | — 14                        |
|      | 18       | 17. 15. 48                              | 9. 14. 22. 41                     | 0. 26. 40 S                      | — 25                         | + 8                         |
|      | 30       | 13. 21. 52                              | 2. 29. 5. 8                       | 0. 49. 41 S                      | — 4                          | — 25                        |

|      | Days, N. S. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|------|-------------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1759 |             | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| May  | 1           | 4. 18. 54 $\frac{1}{2}$           | 3. 13. 6.36             | 0. 25. 8 N             | + 3                    | + 28                  |
|      | 2           | 5. 13. 40                         | 3. 26. 37.46            | 1. 36. 6 N             | - 3                    | + 24                  |
|      | 3           | 6. 5. 19                          | 4. 9.43. 0              | 2. 39. 36 N            | - 21                   | + 22                  |
|      | 6           | 8. 21. 59                         | 5. 17.12.39             | 4. 45. 52 N            | - 25                   | + 8                   |
|      | 8           | 9. 44. 6                          | 6. 11.37.20             | 5. 5. 24 N             | - 14                   | + 6                   |
|      | 9           | 10. 24. 58                        | 6. 23.51.52             | + 54. 27 N             | - 6                    | 0                     |
|      | 10          | 11. 6. 47                         | 7. 6.11.51              | 4. 29. 39 N            | - 19                   | - 4                   |
|      | 15          | 15. 11. 57                        | 9. 10.18.13             | 0. 15. 56 S            | - 42                   | + 7                   |
|      | 17          | 17. 1. 31                         | 10. 7.32.29             | 2. 36. 33 S            | - 58                   | + 2                   |
|      | 18          | 17. 55. 36                        | 10. 21.36.32            | 3. 37. 13 S            | - 66                   | 0                     |
| June | 2           | 6. 18. 26                         | 5. 12.32.27             | 4. 45. 49 N            | - 1                    | + 22                  |
|      | 4           | 7. 41. 38                         | 6. 7. 5.50              | 5. 13. 58 N            | - 20                   | + 12                  |
|      | 6           | 9. 3. 34                          | 7. 1.35.52              | 4. 45. 31 N            | - 17                   | - 14                  |
|      | 7           | 9. 46. 22 $\frac{1}{2}$           | 7. 14. 0.52             | 4. 10. 44 N            | - 13                   | - 2                   |
|      | 8           | 10. 31. 30                        | 7. 26.36.54             | 3. 23. 20 N            | - 4                    | - 6                   |
|      | 9           | 11. 19. 29                        | 8. 9.26.31              | 2. 24. 50 N            | - 8                    | - 6                   |
|      | 14          | 15. 52. 16 $\frac{1}{2}$          | 10. 17.21.11            | 3. 26. 5 S             | - 72                   | + 14                  |
|      | 17          | 18. 27. 22                        | 0. 0.43.26              | 5. 14. 43 S            | - 60                   | + 10                  |
| July | 4           | 7. 41. 5                          | 7. 8.57.59              | 4. 28. 15 N            | - 12                   | + 9                   |
|      | 5           | 8. 24. 57                         | 7. 21.25.49             | 3. 45. 30 N            | - 13                   | + 9                   |
|      | 6           | 9. 11. 35                         | 8. 4. 7.46              | 2. 51. 6 N             | - 13                   | + 6                   |
|      | 7           | 10. 1. 27 $\frac{1}{2}$           | 8. 17. 7.28             | 1. 46. 45 N            | - 23                   | - 2                   |
|      | 8           | 10. 54. 33                        | 9. 0.27. 8              | 0. 35. 5 N             | - 19                   | - 10                  |
|      | 9           | 11. 51. 19                        | 9. 14. 8. 3             | 0. 40. 24 S            | - 24                   | + 17                  |
|      | 10          | 12. 49. 18 $\frac{1}{2}$          | 9. 28. 8.31             | 1. 55. 16 S            | - 28                   | + 16                  |
|      | 11          | 13. 45. 47                        | 10. 12.25.13            | 3. 4. 16 S             | - 38                   | + 23                  |
|      | 12          | 14. 40. 46                        | 10. 26.55.16            | 4. 2. 39 S             | - 59                   | + 19                  |
|      | 13          | 15. 33. 45                        | 11. 11.34.20            | 4. 45. 42 S            | - 60                   | + 21                  |
|      | 14          | 16. 24. 57                        | 11. 26.18.30            | 5. 10. 16 S            | - 64                   | + 23                  |
|      | 15          | 17. 15. 3                         | 0. 11. 4.14             | 5. 14. 32 S            | - 47                   | + 16                  |
|      | 17          | 18. 55. 54                        | 1. 10.30.13             | 4. 22. 18 S            | - 43                   | + 2                   |
|      | 18          | 19. 48. 24                        | 1. 25. 5.44             | 3. 30. 0 S             | - 20                   | - 22                  |
|      | 19          | 20. 42. 59                        | 2. 9.34.12              | 2. 14. 16 S            | - 13                   | - 18                  |
|      | 20          | 21. 39. 23                        | 2. 23.53.19             | 1. 10. 22 S            | - 13                   | - 26                  |
|      | 31          | 5. 35. 47                         | 7. 3.53.33              | 4. 36. 57 N            | + 30                   | + 14                  |

|       | Days,<br>N. | Mean Time<br>of Tranfit of<br>D's Limb. | D's Longi-<br>tude ob-<br>served. | D's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|-------|-------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1759  | S.          | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Aug.  | 1           | 6. 18. 22                               | 7. 16. 10. 44                     | 4. 0. 1 N                        | + 18                         | + 3                         |
|       | 3           | 7. 51. 6                                | 8. 11. 20. 55                     | 2. 12. 10 N                      | — 11                         | — 4                         |
|       | 5           | 9. 36. 42 $\frac{1}{2}$                 | 9. 7. 52. 16                      | 0. 8. 5 S                        | — 19                         | + 14                        |
|       | 7           | 11. 30. 51                              | 10. 6. 6. 3                       | 2. 34. 18 S                      | — 29                         | + 22                        |
|       | 8           | 12. 30. 5                               | 10. 20. 48. 55                    | 3. 37. 25 S                      | — 11                         | + 21                        |
|       | 9           | 13. 25. 19                              | 11. 5. 47. 13                     | 4. 26. 50 S                      | — 17                         | + 18                        |
|       | 10          | 14. 18. 40                              | 11. 20. 54. 50                    | 4. 57. 57 S                      | — 18                         | + 26                        |
|       | 13          | 16. 52. 50                              | 1. 6. 3. 56                       | 4. 26. 55 S                      | — 51                         | + 3                         |
|       | 15          | 18. 38. 47                              | 2. 5. 11. 57                      | 2. 37. 20 S                      | — 32                         | — 1                         |
|       | 17          | 20. 30. 8                               | 3. 3. 20. 49                      | 0. 13. 39 S                      | — 20                         | — 40                        |
|       | 26          | 2. 50. 53 $\frac{1}{2}$                 | 6. 16. 56. 19                     | 4. 57. 27 N                      | + 21                         | + 18                        |
|       | 28          | 4. 13. 24                               | 7. 11. 19. 7                      | 4. 4. 41 N                       | + 41                         | 0                           |
|       | 30          | 5. 42. 38                               | 8. 5. 57. 57                      | 2. 26. 21 N                      | + 32                         | — 3                         |
|       | 31          | 6. 31. 28                               | 8. 18. 37. 29                     | 1. 24. 2 N                       | + 23                         | — 7                         |
| Sept. | 3           | 9. 14. 43                               | 9. 29. 2. 16::                    | 2. 6. 2 S                        | — 26::                       | + 15                        |
|       | 4           | 10. 11. 46                              | 10. 13. 29. 59                    | 3. 11. 0 S                       | — 49                         | + 14                        |
|       | 5           | 11. 8. 11                               | 10. 28. 25. 55                    | 4. 5. 1 S                        | — 45                         | + 13                        |
|       | 6           | 12. 4. 28 $\frac{1}{2}$                 | 11. 13. 45. 10                    | 4. 43. 0 S                       | — 28                         | + 8                         |
|       | 9           | 14. 45. 20                              | 1. 0. 24. 21                      | 4. 29. 49 S                      | — 17                         | + 1                         |
|       | 10          | 15. 38. 53                              | 1. 15. 38. 45                     | 3. 44. 42 S                      | — 28                         | — 6                         |
|       | 11          | 16. 33. 34                              | 2. 0. 32. 37                      | 2. 45. 0 S                       | — 41                         | — 6                         |
|       | 12          | 17. 29. 26                              | 2. 15. 3. 22                      | 1. 35. 59 S                      | — 43                         | — 10                        |
|       | 13          | 18. 25. 55                              | 2. 29. 11. 6                      | 0. 22. 46 S                      | — 43                         | — 14                        |
|       | 15          | 20. 16. 35                              | 3. 26. 24. 26                     | 1. 58. 12 N                      | — 24                         | + 5                         |
|       | 16          | 21. 8. 38 $\frac{1}{2}$                 | 4. 9. 34. 57                      |                                  | — 14                         |                             |
|       | 29          | 6. 6. 44 $\frac{1}{2}$                  | 9. 9. 16. 46                      | 0. 40. 8 S                       | + 19                         | + 9                         |
|       | 30          | 7. 1. 2                                 | 9. 22. 37. 1                      | 1. 48. 17 S                      | + 4                          | + 10                        |
| Oct.  | 2           | 8. 51. 48                               | 10. 20. 48. 39                    | 3. 48. 39 S                      | — 43                         | + 12                        |
|       | 4           | 10. 40. 46 $\frac{1}{2}$                | 11. 21. 5. 8                      | 4. 55. 58 S                      | — 66                         | + 14                        |
|       | 5           | 11. 34. 27 $\frac{1}{2}$                | 0. 6. 48. 10                      | 4. 59. 8 S                       | — 61                         | + 12                        |
|       | 6           | 12. 30. 39                              | 0. 22. 42. 12                     | 4. 39. 32 S                      | — 29                         | + 2                         |
|       | 7           | 13. 25. 27 $\frac{1}{2}$                | 1. 8. 32. 17                      | 3. 58. 21 S                      | — 22                         | 0                           |
|       | 8           | 14. 21. 40 $\frac{1}{2}$                | 1. 24. 8. 10                      | 2. 59. 47 S                      | — 18                         | 0                           |
|       | 12          | 18. 12. 17                              | 3. 22. 10. 6                      | 1. 52. 28 N                      | — 46                         | + 4                         |
|       | 13          | 19. 5. 46 $\frac{1}{2}$                 | 4. 5. 32. 50                      | 2. 54. 47 N                      | — 30                         | + 7                         |
|       | 14          | 19. 55. 55                              | 4. 18. 34. 42                     | 3. 46. 16 N                      | — 17                         | + 2                         |
|       | 28          | 5. 46. 51                               | 10. 0. 53. 17                     | 2. 42. 54 S                      | — 18                         | + 3                         |



|              | Dys. N. | Mean Time of Transit of D's Limb. | D's Longitude observed. | D's Latitude observed. | Error of Tab. in Long. | Error of Tab. in Lat. |
|--------------|---------|-----------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| 1759         |         | H. M. S.                          | S. D. M. S.             | D. M. S.               | S.                     | S.                    |
| Nov.         | 1       | 9. 18. 14                         | 11. 28. 30. 34          | 5. 7. 13 S             | — 6                    | + 2                   |
|              | 2       | 10. 10. 51                        | 0. 14. 3. 48            | 4. 56. 18 S            | — 80                   | + 6                   |
|              | 3       | 11. 4. 43                         | 0. 29. 52. 29           | 4. 22. 44 S            | — 46                   | + 11                  |
|              | 5       | 13. 1. 14                         | 2. 1. 34. 39            | 2. 19. 16 S            | — 34                   | — 3                   |
|              | 6       | 14. 1. 5                          | 2. 17. 2. 32            | 1. 0. 23 S             | — 26                   | + 2                   |
|              | 13      | 20. 8. 20                         | 5. 22. 15. 37           | 5. 9. 30 N             | + 8                    | — 20                  |
|              | 14      | 20. 49. 25                        | 6. 4. 33. 51            | 5. 9. 15 N             | + 22                   | — 24                  |
|              | 15      | 21. 29. 46                        |                         | A.R.                   | + 28                   |                       |
|              | 27      | 6. 18. 15 <sup>1</sup>            | 11. 7. 36. 28           | 4. 56. 7 S             | — 28                   | — 6                   |
|              | 28      | 7. 8. 24                          | 11. 22. 0. 12           | 5. 13. 39 S            | — 50                   | — 3                   |
|              | 29      | 7. 58. 32                         | 0. 6. 47. 59            | 5. 11. 12 S            | — 39                   | + 3                   |
|              | 30      | 8. 49. 36 <sup>1</sup>            | 0. 21. 57. 24           | 4. 47. 19 S            | — 37                   | + 5                   |
| Dec.         | 2       | 10. 38. 35                        | 1. 23. 0. 33            | 2. 59. 13 S            | — 58                   | + 9                   |
|              | 3       | 11. 37. 34                        | 2. 8. 36. 51            | 1. 42. 25 S            | — 49                   | + 17                  |
|              | 7       | 15. 40. 10                        | 4. 7. 58. 12            | 3. 26. 4 N             | — 8                    | + 3                   |
|              | 8       | 16. 32. 27                        | 4. 21. 36. 48           | 4. 17. 4 N             | — 58                   | — 8                   |
|              | 10      | 18. 5. 3                          | 5. 17. 35. 30           | 5. 12. 28 N            | + 15                   | — 5                   |
|              | 11      | 18. 47. 9                         | 6. 0. 5. 45             | 5. 17. 4 N             | + 18                   | — 16                  |
|              | 12      | 19. 27. 53                        | 6. 12. 23. 50           | 5. 6. 49 N             | + 19                   | — 9                   |
|              | 14      | 20. 49. 20                        | 7. 6. 45. 21            | 4. 6. 13 N             | + 19                   | — 19                  |
|              | 15      | 21. 31. 57                        | 7. 18. 58. 23           | 3. 17. 54 N            | + 16                   | + 2                   |
|              | 26      | 5. 53. 53                         | 0. 1. 41. 37            | 5. 16. 13 S            | — 28                   | + 3                   |
|              | 27      | 6. 42. 46                         | 0. 16. 15. 8            | 5. 0. 17 S             | — 17                   | + 3                   |
|              | 28      | 7. 32. 52 <sup>1</sup>            | 1. 1. 2. 12             | 4. 24. 30 S            | — 8                    | — 3                   |
|              | 31      | 10. 19. 32                        | 2. 16. 16. 23           | 1. 2. 0 S              | — 17                   | — 7                   |
| 1760<br>Jan. | 1       | 11. 20. 30                        | 3. 1. 20. 54            | 0. 21. 9 N             | — 26                   | + 4                   |
|              | 2       | 12. 24. 13                        | 3. 16. 14. 16           | 1. 41. 42 N            | — 7                    | + 10                  |
|              | 3       | 13. 23. 28                        | 4. 0. 47. 6             | 2. 53. 46 N            | 0                      | + 3                   |
|              | 5       | 17. 23. 28                        | 6. 7. 22. 16            | 5. 10. 37 S            | + 38                   | — 4                   |
|              | 22      | 3. 51. 49                         | 11. 27. 22. 33          | 5. 11. 8 S             | — 40                   | + 14                  |
|              | 25      | 6. 20. 18                         | 1. 11. 6. 20            | 3. 43. 11 S            | — 17                   | + 6                   |
|              | 26      | 7. 13. 11                         | 1. 25. 46. 14           | 2. 41. 8 S             | — 8                    | — 7                   |
|              | 28      | 9. 7. 9                           | 2. 25. 5. 13            | 0. 9. 55 S             | — 5                    | — 15                  |
|              | 29      | 10. 6. 48                         | 3. 9. 39. 5             | 1. 8. 23 N             | — 19                   | + 18                  |
| Feb.         | 2       | 13. 47. 39                        | 5. 5. 43. 29            | 4. 47. 31 N            | — 11                   | + 14                  |

|      | Day<br>of<br>Month | Mean Time<br>of Transit of<br>J's Limb. | J's Longi-<br>tude ob-<br>served. | J's Lati-<br>tude ob-<br>served. | Error of<br>Tab. in<br>Long. | Error of<br>Tab. in<br>Lat. |
|------|--------------------|-----------------------------------------|-----------------------------------|----------------------------------|------------------------------|-----------------------------|
| 1760 |                    | H. M. S.                                | S. D. M. S.                       | D. M. S.                         | S.                           | S.                          |
| Feb. | 6                  | 16. 39. 49                              | 6. 26. 47. 49                     | + 24. 24 N                       | + 31                         | - 3                         |
|      | 9                  | 18. 49. 3                               | 8. 3. 25. 54                      | 1. 58. 18 N                      | + 5                          | - 26                        |
|      | 20                 | 3. 26. 2                                |                                   | A.R.                             | - 8                          |                             |
|      | 21                 | 5. 9. 36                                | 1. 21. 24. 32                     | 2. 47. 37 S                      | - 23                         | + 1                         |
|      | 24                 | 7. 1. 16 $\frac{1}{2}$                  | 2. 22. 30. 58                     | 0. 22. 52 S                      | - 21                         | - 16                        |
|      | 25                 | 7. 59. 30                               | 3. 4. 49. 29                      | 0. 52. 46 N                      | - 14                         | + 25                        |
|      | 27                 | 9. 54. 3                                | 4. 2. 54. 3                       | 3. 7. 2 N                        | - 26                         | + 30                        |
|      | 28                 | 10. 47. 33                              | 4. 16. 38. 1                      | 3. 57. 49 N                      | - 31                         | + 31                        |
|      | 29                 | 11. 37. 40                              | 5. 0. 8. 16                       | + 34. 16 N                       | - 39                         | + 30                        |
| Mar. | 1                  | 12. 26. 40                              | 5. 13. 24. 46                     | 4. 55. 13 N                      | - 32                         | + 17                        |
|      | 4                  | 14. 34. 42 $\frac{1}{2}$                | 6. 21. 41. 45                     | 4. 25. 26 N                      | + 7                          | - 1                         |
|      | 7                  | 16. 42. 25                              | 7. 28. 25. 23                     | 2. 7. 14 N                       | - 5                          | - 26                        |
|      | 10                 | 19. 8. 10                               |                                   | A.R.                             | - 20                         |                             |
|      | 21                 | 3. 57. 56                               | 2. 1. 7. 30                       | 1. 47. 14 S                      | - 9                          | 0                           |
|      | 22                 | 4. 55. 40                               | 2. 15. 59. 5                      | 0. 30. 55 S                      | - 24                         | - 12                        |
|      | 27                 | 9. 34. 9                                | 4. 25. 41. 12                     | 4. 31. 26 N                      | - 26                         | + 26                        |
|      | 28                 | 10. 21. 12                              | 5. 8. 49. 32                      | + 54. 8 N                        | - 39                         | + 20                        |
|      | 29                 | 11. 5. 34                               | 5. 21. 44. 59                     | 5. 1. 13 N                       | - 56                         | + 18                        |
|      | 30                 | 11. 48. 1 $\frac{1}{2}$                 | 6. 4. 28. 36                      | + 53. 11 N                       | - 43                         | + 8                         |
|      | 31                 | 12. 31. 30                              | 6. 17. 2. 22                      | + 30. 56 N                       | - 24                         | - 3                         |
| Apr. | 2                  | 13. 54. 41                              | 7. 11. 41. 46                     | 3. 10. 14 N                      | - 4                          | - 18                        |
|      | 3                  | 14. 37. 57 $\frac{1}{2}$                | 7. 23. 52. 56                     | 2. 16. 0 N                       | 0                            | - 27                        |
|      | 4                  | 15. 23. 8 $\frac{1}{2}$                 | 8. 6. 2. 52                       | 1. 15. 12 N                      | - 17                         | - 27                        |
|      | 20                 | 4. 45. 22                               | 3. 9. 49. 41                      | 1. 47. 47 N                      | - 18                         | + 23                        |
|      | 22                 | 6. 40. 22                               | 4. 8. 7. 7                        | 3. 52. 21 N                      | - 27                         | + 20                        |
|      | 24                 | 8. 20. 3                                | 5. 4. 50. 13                      | 4. 58. 57 N                      | - 17                         | + 22                        |
|      | 26                 | 9. 47. 19                               | 6. 0. 25. 19 $\frac{1}{2}$        | 5. 2. 57 N                       | - 29 $\frac{1}{2}$           | + 6                         |
|      | 27                 | 10. 28. 31                              | 6. 12. 54. 59                     | 4. 12. 38 N                      | - 18                         | + 7                         |
|      | 29                 | 11. 50. 45 $\frac{1}{2}$                | 7. 7. 32. 8                       | 3. 24. 46 N                      | - 22                         | - 12                        |
|      | 30                 | 12. 35. 20 $\frac{1}{2}$                | 7. 19. 44. 55                     | 2. 30. 54 N                      | - 23                         | - 23                        |
| May  | 23                 | 7. 46. 44 $\frac{1}{2}$                 | 5. 26. 24. 35                     | 5. 13. 4 N                       | - 2                          | + 12 $\frac{1}{2}$          |
|      | 24                 | 8. 28. 15                               | 6. 8. 57. 58                      | 4. 56. 3 N                       | 0                            | + 14                        |
|      | 27                 | 10. 31. 52 $\frac{1}{2}$                | 7. 15. 45. 11 $\frac{1}{2}$       | 2. 50. 49 N                      | - 10 $\frac{1}{2}$           | - 5                         |
|      | 28                 | 11. 15. 37                              | 7. 27. 55. 3                      | 1. 50. 43 N                      | - 4                          | - 14                        |
|      | 31                 | 13. 42. 23                              | 9. 4. 48. 33                      | 1. 30. 37 S                      | - 19                         | + 1                         |

|       | DAYS, N <sup>o</sup> . | Mean Time of Transit of D's Limb. | D's Longitude observed.     | D's Latitude observed.    | Error of Tab. in Long. | Error of Tab. in Lat. |
|-------|------------------------|-----------------------------------|-----------------------------|---------------------------|------------------------|-----------------------|
| 1760  | N <sup>o</sup> .       | H. M. S.                          | S. D. M. S.                 | D. M. S.                  | S.                     | S.                    |
| June  | 2                      | 15. 25. 26 $\frac{1}{2}$          | 10. 0. 5. 47 $\frac{1}{2}$  | 3. 31. 54 S               | - 50 $\frac{1}{2}$     | + 11                  |
|       | 3                      | 16. 16. 21                        | 10. 13. 4. 6                | 4. 19. 30 S               | - 52                   | + 15                  |
|       | 18                     | 4. 57. 49 $\frac{1}{2}$           | 5. 8. 26. 54                | 5. 12. 23 N               | + 37                   | + 24                  |
|       | 19                     | 5. 43. 19 $\frac{1}{2}$           | 5. 21. 41. 23               | 5. 16. 30 N               | + 30                   | + 23                  |
|       | 21                     | 7. 7. 26                          | 6. 17. 4. 55                | 4. 38. 4 N                | + 20                   | + 14                  |
|       | 22                     | 7. 48. 22                         | 6. 29. 24. 33               | 3. 59. 14 $\frac{1}{2}$ N | + 30                   | + 8 $\frac{1}{2}$     |
|       | 23                     | 8. 29. 55                         | 7. 11. 36. 36               | 3. 9. 56 N                | + 12                   | + 5                   |
|       | 25                     | 9. 58. 9                          | 8. 5. 57. 12                | 1. 8. 11 N                | + 5                    | + 3                   |
|       | 28                     | 12. 29. 34                        | 9. 13. 15. 19               | 2. 13. 5 S                | - 7                    | + 8                   |
|       | 29                     | 13. 21. 42                        | 9. 26. 2. 12                | 3. 13. 5 S                | - 10                   | + 11                  |
|       | 30                     | 14. 13. 19                        | 10. 9. 1. 58                | 4. 4. 3 S                 | - 31                   | + 9                   |
| July  | 18                     | 5. 3. 12 $\frac{1}{2}$            | 6. 12. 7. 27                | 4. 43. 24 N               | + 46                   | + 27                  |
|       | 22                     | 7. 53. 23                         | 8. 1. 25. 3                 | 1. 27. 13 S               | + 13                   | + 6                   |
|       | 23                     | 8. 40. 6                          | 8. 13. 38. 35               | 0. 21. 58 N               | + 14                   | 0                     |
|       | 24                     | 9. 29. 17                         | 8. 26. 0. 32                | 0. 44. 52 S               | + 10                   | + 8                   |
|       | 27                     | 12. 6. 39                         | 10. 4. 26. 55               | 3. 45. 3 S                | + 4                    | + 14                  |
|       | 29                     | 13. 49. 21                        | 11. 1. 21. 27               | 4. 55. 5 S                | - 17                   | + 13                  |
| Aug.  | 3                      | 17. 50. 57                        | 1. 12. 13. 48               | 2. 54. 28 S               | - 4                    | + 8                   |
|       | 4                      | 18. 44. 12 $\frac{1}{2}$          | 1. 26. 53. 59               | 1. 44. 41 S               | - 38                   | + 5                   |
|       | 21                     | 8. 11. 36                         | 9. 3. 24. 13                | 1. 32. 59 S               | + 1                    | + 15                  |
|       | 23                     | 9. 56. 14                         | 9. 29. 1. 49                | 3. 28. 32 S               | - 3                    | + 18                  |
|       | 27                     | 13. 20. 47 $\frac{1}{2}$          | 11. 24. 10. 50              | 4. 56. 37 S               | - 12                   | + 17                  |
|       | 28                     | 14. 9. 4                          | 0. 8. 36. 54                | 4. 34. 57 S               | - 17                   | + 9                   |
|       | 29                     | 14. 57. 46                        | 0. 23. 11. 3 $\frac{1}{2}$  | 3. 55. 41 S               | - 19 $\frac{1}{2}$     | - 26                  |
|       | 31                     | 16. 40. 25                        | 1. 22. 31. 8                | 1. 52. 13 S               | - 45                   | - 5                   |
| Sept. | 1                      | 17. 35. 54                        | 2. 7. 12. 4                 | 0. 37. 8 S                | - 46                   | - 6                   |
|       | 17                     | 6. 2. 30 $\frac{1}{2}$            | 8. 28. 11. 9                | 1. 21. 23 S               | + 14                   | + 18                  |
|       | 20                     | 8. 37. 18                         | 10. 6. 16. 44               | 4. 4. 22 S                | - 14                   | + 21                  |
|       | 27                     | 14. 34. 1                         | 1. 17. 23. 37               | 2. 4. 16 $\frac{1}{2}$ S  | - 27                   | + 1 $\frac{1}{2}$     |
|       | 29                     | 16. 28. 40                        | 2. 17. 22. 45 $\frac{1}{2}$ | 0. 31. 47 N               | - 52 $\frac{1}{2}$     | + 6                   |
| Oct.  | 1                      | 18. 29. 30                        | 3. 16. 40. 32               | 2. 56. 46 N               | - 48                   | + 5                   |
|       | 18                     | 7. 17. 36 $\frac{1}{2}$           | 10. 13. 29. 37              | 4. 36. 56 S               | - 10                   | + 16                  |
|       | 20                     | 8. 56. 33                         | 11. 10. 39. 23              | 5. 9. 45 S                | - 50                   | + 17                  |
|       | 24                     | 12. 20. 39                        | 1. 10. 18. 31               | 2. 33. 12 S               | - 40                   | - 6                   |
|       | 25                     | 13. 17. 7                         | 1. 25. 51. 40               | 1. 14. 45 S               | - 45                   | - 7                   |
| Nov.  | 2                      | 20. 40. 1                         | 5. 21. 34. 5                | 5. 6. 40 N                | + 22                   | + 28                  |



E L E M E N T S

O F T H E

L U N A R T A B L E S

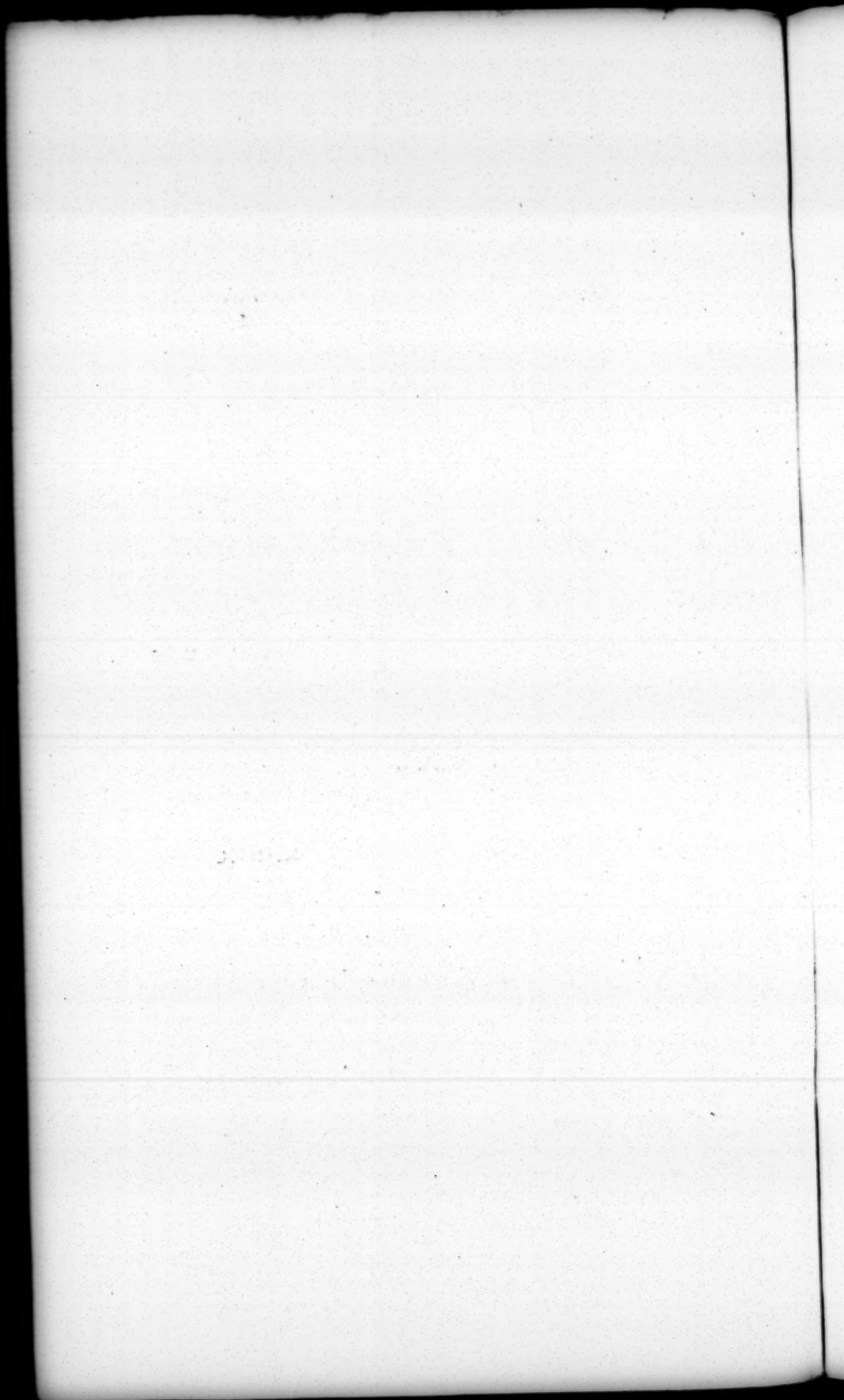
W I T H W H I C H

The foregoing Series of Observations was  
compared ;

A N D A L S O O F

MAYER'S First and Second Manuscript  
T A B L E S ;

And of another S E T of T A B L E S.



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# E L E M E N T S

O F T H E

## L U N A R T A B L E S, &c.

**A**FTER Mayer's first manuscript tables were put into the hands of the late Dr. Bradley in the beginning of the year 1755, he compared them with a great number of his observations made with the new instruments since the year 1750, and thence made out a new and corrected set of tables which are those that the foregoing series of 10 years observations was compared with.

These tables being rather inferior to Mayer's second manuscript, which are now the printed tables, it is not thought necessary to print them, but instead of that I shall here exhibit their elements expressed in the manner of Mayer's Formulæ at the end of his *Theoria Lunæ*, together with those of Mayer's second manuscript tables, and a set of tables constructed by that able computer the late Mr. Gael Morris, being (like Dr. Bradley's) corrections  
upon



upon Mayer's first manuscript tables made by the help of Dr. Bradley's observations, a few copies of which were printed and given by the author to his friends.

The epochs of the mean longitudes of the Moon, her apogee and ascending node to the beginning of the year 1750 N. S. the Moon's acceleration being included, are shewn in the following table.

|                        | Mean Long.<br>of ☽ |    |     |    | Mean Long.<br>of Apog. |     |     |    | Mean Long.<br>of Ω |     |     |    |
|------------------------|--------------------|----|-----|----|------------------------|-----|-----|----|--------------------|-----|-----|----|
|                        | S.                 | D. | M.  | S. | S.                     | D.  | M.  | S. | S.                 | D.  | M.  | S. |
| Mayer's 1st manuscript | 6.                 | 8. | 22. | 39 | 5.                     | 20. | 55. | 59 | 9.                 | 10. | 18. | 38 |
| Mayer's 2d manuscript  | 6.                 | 8. | 22. | 26 | 5.                     | 20. | 55. | 54 | 9.                 | 10. | 19. | 8  |
| Dr. Bradley's tables - | 6.                 | 8. | 22. | 20 | 5.                     | 20. | 55. | 45 | 9.                 | 10. | 18. | 30 |
| Mr. Morris's tables -  | 6.                 | 8. | 22. | 27 | 5.                     | 20. | 55. | 52 | 9.                 | 10. | 20. | 0  |

The Maxima of the equations of the Moon's longitude are contained in the following table according to the form of that in p. 52 of Mayer's *Theoria Lunæ*.

Mayer's

|       | Mayer's 1st manuscript<br>Tables.               |  | Mayer's print-<br>ed Tables. |  | Dr. Bradley's<br>Tables.    |  | Mr. Morris's<br>Tables. |  |
|-------|-------------------------------------------------|--|------------------------------|--|-----------------------------|--|-------------------------|--|
|       | D. M. S.                                        |  | D. M. S.                     |  | D. M. S.                    |  | D. M. S.                |  |
| I.    | + 0. 11. 14 fin. s                              |  | + 0. 11. 16                  |  | + 0. 11. 14                 |  | + 0. 11. 14             |  |
| II.   | - 0. 0. 4 fin. 2 s                              |  | - 0. 0. 4                    |  | - 0. 0. 7                   |  | - 0. 0. 7               |  |
| III.  | - 0. 0. 56 fin. (2 $\omega$ + s)                |  | - 0. 0. 54                   |  | - 0. 0. 56                  |  | - 0. 0. 56              |  |
| IV.   | - 0. 0. 1. 6 fin. (2 $\omega$ - s)              |  | - 0. 0. 1. 9                 |  | - 0. 0. 1. 6                |  | - 0. 0. 1. 10           |  |
| V.    | + 0. 0. 0. 53 fin. (2 $\omega$ + $\dot{p}$ )    |  | + 0. 0. 0. 54                |  | + 0. 0. 1. 0                |  | + 0. 0. 1. 5            |  |
| VI.   | - 1. 20. 36 fin. (2 $\omega$ - $\dot{p}$ )      |  | - 1. 20. 33                  |  | - 1. 20. 35                 |  | - 1. 20. 30             |  |
| VII.  | + 0. 0. 0. 38 fin. (4 $\omega$ - 2 $\dot{p}$ )  |  | + 0. 0. 0. 35 $\frac{1}{2}$  |  | + 0. 0. 0. 35 $\frac{1}{2}$ |  | + 0. 0. 0. 35           |  |
| VIII. | + 0. 0. 2. 0 fin. (2 $\omega$ - $\dot{p}$ + s)  |  | + 0. 0. 2. 9                 |  | + 0. 0. 2. 0                |  | + 0. 0. 2. 0            |  |
| IX.   | + 0. 0. 0. 39 fin. (2 $\omega$ - $\dot{p}$ - s) |  | + 0. 0. 0. 49                |  | + 0. 0. 0. 47               |  | + 0. 0. 0. 47           |  |
| X.    | + 0. 0. 0. 28 fin. ( $\dot{p}$ - s)             |  | + 0. 0. 0. 34                |  | + 0. 0. 0. 28               |  | + 0. 0. 0. 36           |  |
|       | + 0. 0. 0. 56 fin. (2 $\omega$ - 2 s)           |  | + 0. 0. 0. 56                |  | + 0. 0. 0. 51               |  | + 0. 0. 0. 51           |  |
|       | + 0. 0. 0. 16 fin. ( $\omega$ - $\dot{p}$ )     |  | + 0. 0. 0. 16                |  | + 0. 0. 0. 16               |  | + 0. 0. 0. 16           |  |
|       | - 0. 0. 0. 57 fin. (2 $\omega$ - 2 $\dot{p}$ )  |  | - 0. 0. 1. 0                 |  | - 0. 0. 1. 0                |  | - 0. 0. 1. 0            |  |

|       | Mayer's 1st manuscript<br>Tables. |           | Mayer's print-<br>ed Tables.         |   | Dr. Bradley's<br>Tables. |   | Mr. Morris's<br>'Tables. |   |
|-------|-----------------------------------|-----------|--------------------------------------|---|--------------------------|---|--------------------------|---|
|       | D. M. S.                          |           | D. M. S.                             |   | D. M. S.                 |   | D. M. S.                 |   |
| XI.   | —                                 | 6. 18. 11 | fin. $\tilde{p}$                     | — | 6. 18. 11                | — | 6. 18. 12                | — |
|       | +                                 | 0. 12. 52 | fin. $2\tilde{p}$                    | + | 0. 13. 0                 | + | 0. 13. 0                 | + |
|       | —                                 | 0. 0. 37  | fin. $3\tilde{p}$                    | — | 0. 0. 37                 | — | 0. 0. 38                 | — |
|       | —                                 | 0. 1. 55  | fin. $\omega$                        | — | 0. 1. 55                 | — | 0. 1. 57                 | — |
| XII   | +                                 | 0. 35. 47 | fin. $2\tilde{\omega}$               | + | 0. 35. 43                | + | 0. 35. 47                | + |
|       | +                                 | 0. 0. 2   | fin. $3\tilde{\omega}$               | + | 0. 0. 2                  | + | 0. 0. 0                  | + |
|       | +                                 | 0. 0. 14  | fin. $4\tilde{\omega}$               | + | 0. 0. 12                 | + | 0. 0. 12                 | + |
|       | +                                 | 0. 1. 25  | fin. $(2\tilde{\delta} - \tilde{p})$ | + | 0. 1. 23                 | + | 0. 1. 26                 | + |
| XIII. | —                                 | 0. 6. 51  | fin. $2\tilde{\delta}$               | — | 0. 6. 43                 | — | 0. 6. 51                 | — |
| XIV.  |                                   |           | fin. $(\omega + \epsilon)$           |   |                          |   | 0. 0. 15                 | — |

The annual Equation of the Moon's mean Anomaly.

|   |   |                        |                  |   |           |   |          |   |          |
|---|---|------------------------|------------------|---|-----------|---|----------|---|----------|
| } | + | 0. 25. 15              | fin. $\epsilon$  | + | 0. 23. 12 | + | 0. 23. 6 | + | 0. 22. 6 |
|   | — | 0. 0. 15 $\frac{1}{2}$ | fin. $2\epsilon$ | — | 0. 0. 6   | — | 0. 0. 14 | — | 0. 0. 14 |



| Mayer's 1st manuscript<br>Tables.                 |   | Mayer's print-<br>ed Tables.                     |               | Dr. Bradley's<br>Tables. |                         | Mr. Morris's<br>Tables. |  |
|---------------------------------------------------|---|--------------------------------------------------|---------------|--------------------------|-------------------------|-------------------------|--|
| D. M. S.                                          |   | D. M. S.                                         |               | D. M. S.                 |                         | D. M. S.                |  |
| The annual Equation of the Moon's Ascending Node. |   |                                                  |               |                          |                         |                         |  |
| {                                                 |   | + 0. 9. 13 fin. s                                | + 0. 8. 50    | + 0. 9. 13               | + 0. 9. 13              | + 0. 9. 13              |  |
| {                                                 |   | - 0. 0. 5 $\frac{1}{2}$ fin. 2 s                 | - 0. 0. 2     | - 0. 0. 5 $\frac{1}{2}$  | - 0. 0. 5 $\frac{1}{2}$ | - 0. 0. 5 $\frac{1}{2}$ |  |
| The Equations of Latitude.                        |   |                                                  |               |                          |                         |                         |  |
| I.                                                | { | + 5. 8. 31 $\frac{1}{2}$ fin. $\delta$           | + 5. 8. 46    | + 5. 8. 42               | + 5. 8. 42              | + 5. 8. 39              |  |
| II.                                               | { | - 0. 0. 5 $\frac{1}{2}$ fin. 3 $\delta$          | - 0. 0. 6     | - 0. 0. 6                | - 0. 0. 6               | - 0. 0. 6               |  |
| III.                                              | { | + 0. 8. 47 fin. ( $2\tilde{\omega}-\delta$ )     | + 0. 8. 47    | + 0. 8. 47               | + 0. 8. 47              | + 0. 8. 47              |  |
| IV.                                               | { | - 0. 0. 21, 0 fin. ( $\delta-s$ )                | + 0. 0. 2, 0  | - 0. 0. 16               | - 0. 0. 16              | - 0. 0. 21              |  |
| V.                                                | { | - 0. 0. 23, 0 fin. ( $\delta-\tilde{p}$ )        | - 0. 0. 17, 4 | - 0. 0. 25               | - 0. 0. 25              | - 0. 0. 23              |  |
| VI.                                               | { | + 0. 0. 2, 7 fin. ( $\delta-2\tilde{p}$ )        | + 0. 0. 24, 1 | - 0. 0. 2, 7             | - 0. 0. 2, 7            | - 0. 0. 2, 7            |  |
| VII.                                              | { | - 0. 0. 9, 7 fin. ( $\delta-3\tilde{p}$ )        | - 0. 0. 2, 7  | - 0. 0. 8, 3             | - 0. 0. 8, 3            | - 0. 0. 8, 3            |  |
|                                                   |   | - 0. 0. 9, 7 fin. ( $2\tilde{\omega}-\delta+s$ ) | - 0. 0. 8, 3  | - 0. 0. 8, 3             | - 0. 0. 8, 3            | - 0. 0. 8, 3            |  |

|       | Mayer's 1st manuscript Tables.                             |   | Mayer's printed Tables. |   | Dr. Bradley's Tables. |   | Mr. Morris's Tables.   |  |
|-------|------------------------------------------------------------|---|-------------------------|---|-----------------------|---|------------------------|--|
|       | D. M. S.                                                   |   | D. M. S.                |   | D. M. S.              |   | D. M. S.               |  |
| VIII. | — 0. 0. 3,6 sin. ( $2\tilde{\omega} - \delta - \epsilon$ ) | + | 0. 0. 3,7               | — | —                     | — | 0. 0. 3 $\frac{1}{2}$  |  |
| IX.   | — 0. 0. 2,1 sin. ( $2\tilde{\omega} - \delta + \dot{p}$ )  | — | 0. 0. 2,2               | — | —                     | — | —                      |  |
| X.    | + 0. 0. 16,5 sin. ( $2\tilde{\omega} - \delta - \dot{p}$ ) | + | 0. 0. 15,0              | + | 0. 0. 16              | + | 0. 0. 16 $\frac{1}{2}$ |  |
| XI.   | — 0. 0. 6,4 sin. ( $2\tilde{\omega} - \delta - 2\dot{p}$ ) | — | 0. 0. 6,0               | — | —                     | — | 0. 0. 6 $\frac{1}{2}$  |  |
|       | + 0. 0. 2,1 sin. ( $2\tilde{\omega} + \delta - 2\dot{p}$ ) |   |                         |   |                       |   |                        |  |

The Equations of Latitude continued.

The Maxima of the Tables of the Moon's Equatorial Parallax are as follows.

|       | Mayer's 1st manuscript<br>Tables. |       | Mayer's print-<br>ed Tables. |          | Dr. Bradley's<br>Tables. |       | Mr. Morris's<br>Tables. |       |
|-------|-----------------------------------|-------|------------------------------|----------|--------------------------|-------|-------------------------|-------|
|       | M. S.                             |       | M. S.                        |          | M. S.                    |       | M. S.                   |       |
| I.    | -                                 | -     | +                            | 0. 0, 3  | -                        | -     | -                       | -     |
| II.   | -                                 | -     | -                            | 0. 0, 7  | -                        | -     | -                       | -     |
| III.  | -                                 | -     | -                            | 0. 0, 8  | -                        | -     | -                       | -     |
| IV.   | -                                 | -     | +                            | 0. 0, 1  | -                        | -     | -                       | -     |
| V.    | -                                 | 0. 38 | -                            | 0. 37, 3 | -                        | 0. 38 | -                       | 0. 38 |
| VI.   | -                                 | -     | +                            | 0. 0, 3  | -                        | -     | -                       | -     |
| VII.  | -                                 | -     | +                            | 0. 1, 0  | -                        | -     | -                       | -     |
| VIII. | -                                 | -     | +                            | 0. 0, 6  | -                        | -     | -                       | -     |
| IX.   | -                                 | -     | +                            | 0. 0, 2  | -                        | -     | -                       | -     |
| X.    | -                                 | -     | +                            | 0. 0, 4  | -                        | -     | -                       | -     |
|       | -                                 | -     | +                            | 0. 0, 2  | -                        | -     | -                       | -     |
|       | -                                 | -     | +                            | 0. 2, 0  | -                        | -     | -                       | -     |



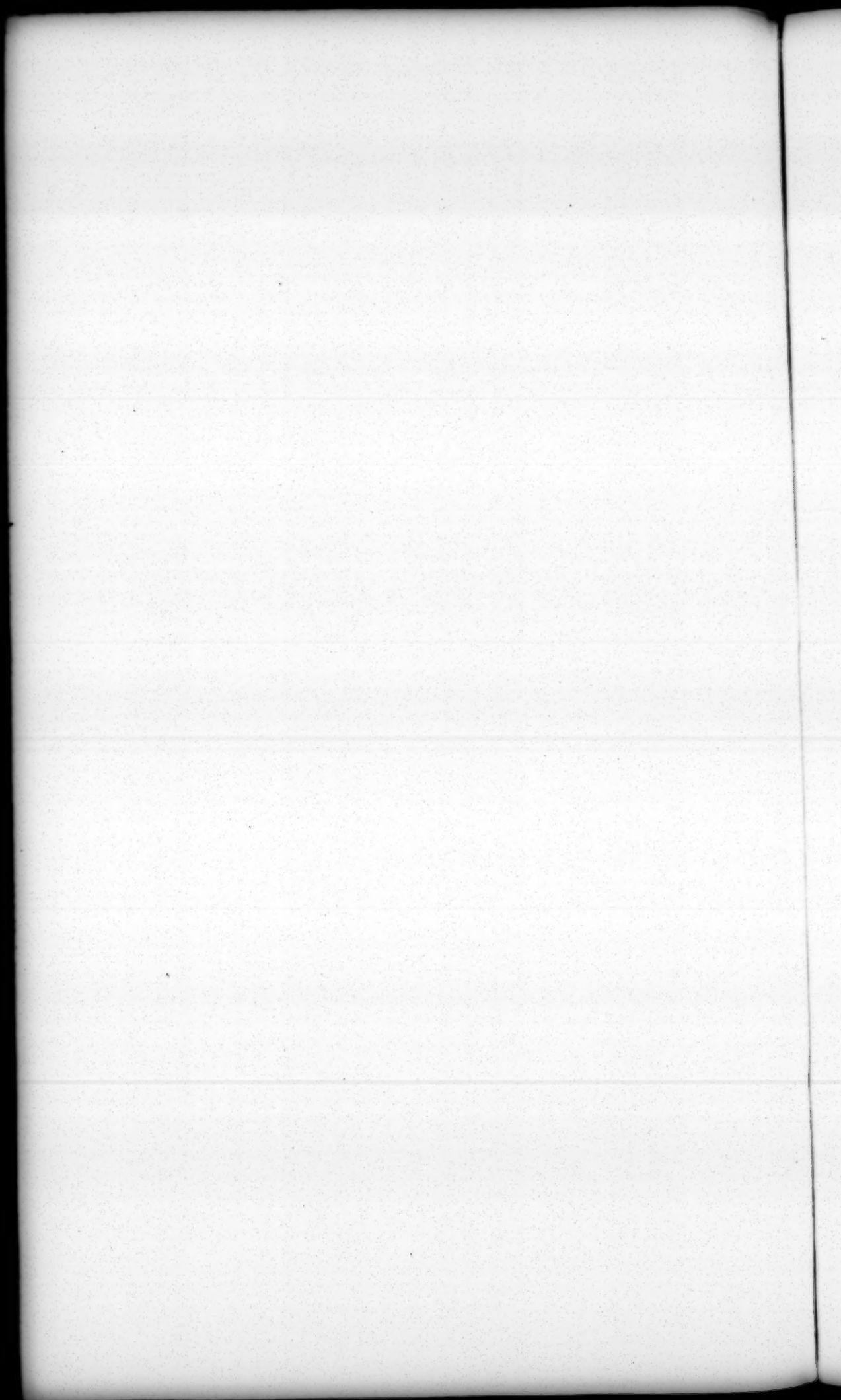
The Maxima of the Tables of the Moon's Equatorial Parallax continued.

|       | Mayer's 1st manuscript<br>Tables. |         | Mayer's print-<br>ed Tables.       |           | Dr. Bradley's<br>Tables. |                      | Mr. Morris's<br>Tables. |         |
|-------|-----------------------------------|---------|------------------------------------|-----------|--------------------------|----------------------|-------------------------|---------|
|       | M. S.                             |         | M. S.                              |           | M. S.                    |                      | M. S.                   |         |
| XI.   | -                                 | 57. 8   | -                                  | 57. 11, 0 | -                        | 57. 15 $\frac{1}{2}$ | -                       | 57. 14  |
|       | -                                 | 3. 8    | cos. $\tilde{p}$                   | -         | -                        | 3. 8 $\frac{1}{2}$   | -                       | 3. 8    |
|       | +                                 | 0. 10   | cos. $2\tilde{p}$                  | +         | +                        | 0. 10                | +                       | 0. 10   |
| XII.  | -                                 | -       | cos. $3\tilde{p}$                  | -         | -                        | -                    | -                       | -       |
|       | -                                 | 0. 1, 5 | cos. $\tilde{\omega}$              | -         | -                        | 0. 1, 5              | -                       | 0. 1, 5 |
|       | +                                 | 0. 27   | cos. $2\tilde{\omega}$             | +         | +                        | 0. 27                | +                       | 0. 27   |
| XIII. | -                                 | -       | cos. $4\tilde{\omega}$             | +         | +                        | -                    | -                       | -       |
|       | -                                 | -       | cos. $(2\tilde{\delta}-\tilde{p})$ | +         | -                        | -                    | -                       | -       |
|       | -                                 | -       |                                    | +         | -                        | -                    | -                       | -       |

When the Moon's equatorial parallax is  $57'. 8''$ . in Mayer's first manuscript tables, it will be  $57'. 11''$ . in the printed tables,  $57'. 15\frac{1}{2}''$ . in Dr. Bradley's tables, and  $57'. 14'$ . in Mr. Morris's tables; and at the same time the Moon's diameter will be given  $31'. 10''$ . by both tables of Mayer,  $31'. 14''$ . by Dr. Bradley's tables, and  $31'. 13''$ . by Mr. Morris's tables.

Mayer, in constructing his first tables, supposed the ratio of the equatorial to the polar axis of the earth to be as 200 to 199, and Dr. Bradley and Mr. Morris have adopted the same: in Mayer's printed tables, the ratio of 231 to 230 is made use of.

REMARKS



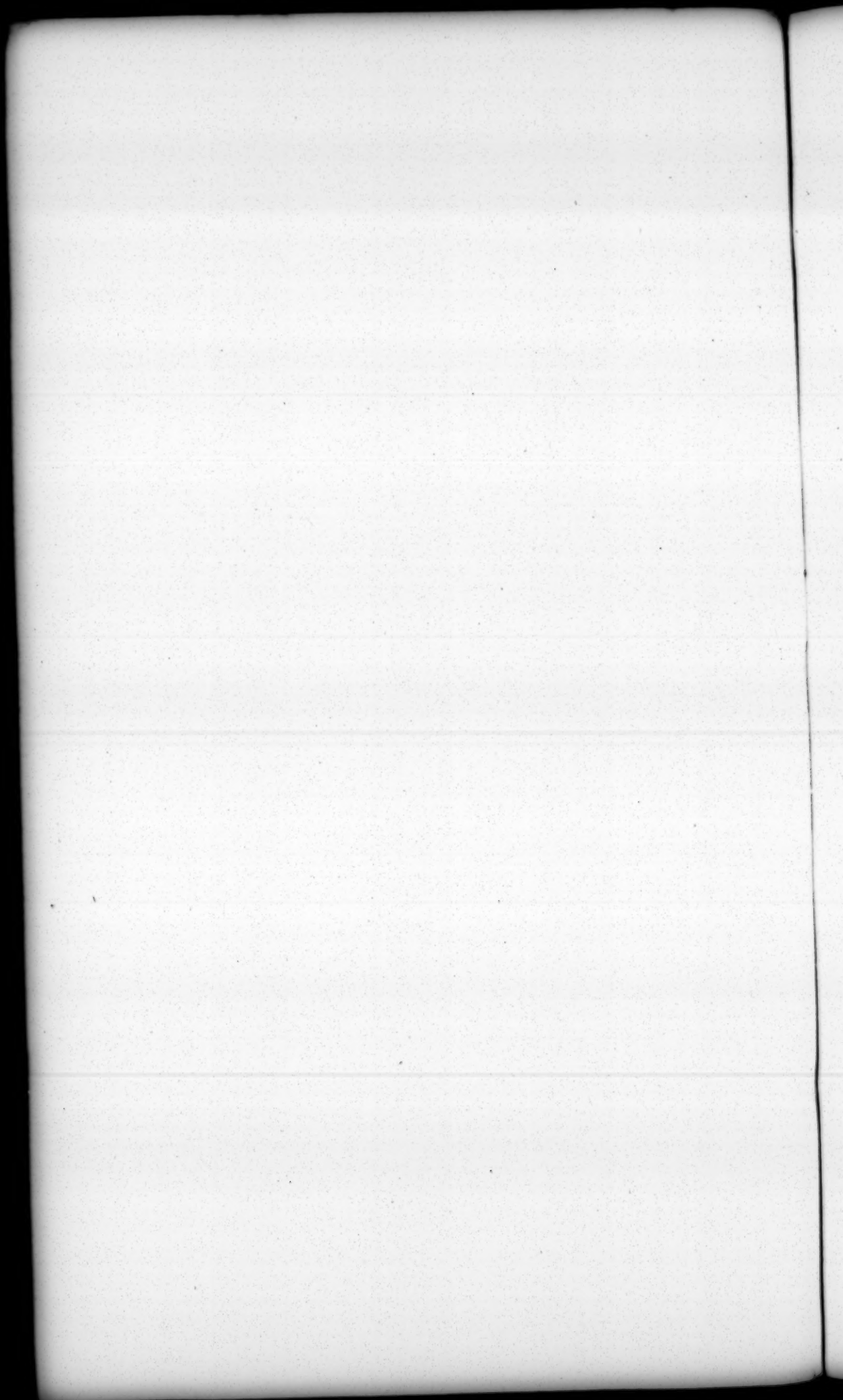


**R E M A R K S**  
**ON THE**  
**HADLEY'S QUADRANT.**

**B Y**

**The Rev'd NEVIL MASKELYNE, B.D.F.R.S.**  
**ASTRONOMER ROYAL.**

**[G]**



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## REMARKS, &c.

**A**LTHOUGH the Hadley's Quadrant, as contrived by Mr. Hadley, was equally fitted for observing angles from from  $90^{\circ}$  to  $180^{\circ}$  by the back-observation, as from  $0^{\circ}$  to  $90^{\circ}$  by the fore-observation, and the quadrants have accordingly been generally made with a back-horizon-glass as well as a fore-one to serve this double purpose, yet notwithstanding the back-observation has been very little made use of to this time; partly owing to the difficulty of adjusting the back-horizon-glass, and partly to the want of a director of the sight, which, though recommended by Mr. Hadley, has, for I know not what reason, been generally omitted in the construction of the instrument.

The difficulties of adjusting the back-horizon-glass are happily lately got over by an ingenious contrivance of Mr. Dollond by means of an additional index applied to this glass (for which he has taken out a patent) whereby both its adjustments may be made by the same observations and with nearly the same exactness as those of the fore-horizon-glass. The other impediment to the use of the back-observation, namely the want of a director of the sight, will be removed by restoring it to the quadrant, or by applying a small telescope to it, which will be more convenient and exact in celestial observations. The direction of the sight will be rendered parallel to the plane of the quadrant by the proper construction of the director; how to place the axis of the telescope exactly parallel to the



plane of the quadrant shall be shewn presently ; but first it is necessary to premise, that an adjusting piece must be applied to the telescope for this purpose ; that two thick parallel silver wires, dividing the diameter of the field of view into three equal parts, are to be placed in the focus of the eye-glass, which, by turning the eye-tube round about, are to be brought to appear parallel to the plane of the quadrant ; and that the back-horizon-glass should be silvered in the same manner as the fore-horizon-glass.

In order to adjust the axis of the telescope parallel to the plane of the quadrant proceed as follows ; when the distance of the Moon from the Sun is greater than  $90^{\circ}$  (but the greater the better) by giving a sweep with the quadrant and moving the index, bring the nearest limbs to touch one another at the wire nearest the plane of the quadrant : then, the index remaining unmoved, make the like observation at the wire farthest from the plane of the quadrant, and note whether the nearest limbs are in contact as they were at the other wire ; if they are, the axis of the telescope is parallel to the plane of the quadrant ; but if they are not, it is inclined to the same, and must be corrected, as follows. If the nearest limbs of the Sun and Moon seem to lap over one another at the wire farthest from the plane of the quadrant, the object end of the telescope is inclined from the plane of the quadrant, and must be altered by the adjustment made for that purpose ; but if the nearest limbs of the Sun and Moon do not come to touch one another at the wire farthest from the plane of the quadrant, the object end of the telescope is inclined towards the plane of the quadrant, and must be altered by the adjustment accordingly. Let these operations be repeated until the observation is the same at both the parallel wires ; and the axis of the telescope will be adjusted parallel to the plane of the quadrant. In like manner the axis of the telescope may be also adjusted parallel to the plane of the quadrant for the fore-observation.

The

The two parallel wires will be very useful on many occasions, as well in the fore as the back-observation. In taking the altitude of the Sun, Moon, or Star, direct the sight towards the part of the horizon underneath or opposite to the object, according as you intend to observe by the fore or the back-observation, and hold the quadrant that the wires may constantly appear perpendicular to the horizon, and move the index till you see the object come down towards the horizon in the fore-observation, or up to it in the back-observation, and turn the instrument in order to bring the object between the wires; then move the index till the Sun's or Moon's limb, or the Star touch the horizon. The nearer the object is brought to an imaginary line in the middle between the wires (it is indifferent what part of the line it is brought to) and the truer the wires are kept perpendicular to the horizon, the more exact will the observation be. In the fore-observation the object appears in its real position; but, in the back-observation, the object being brought through the zenith to the horizon, the real upper limb will appear the lowest and the contrary. Either limb of the Sun may be used in either observation, but it will be most convenient in general to make the Sun appear against the sky and not against the sea; and then, the objects appearing inverted through the telescope, the Sun will appear lowest and the horizon highest. The observed altitude is to be corrected for dip, refraction, and Sun's semidiameter as usual.

In taking the distance of the nearest limbs of the Sun and Moon, whether in the fore or back-observation, having first set the index to the distance nearly by the help of the Nautical Almanac, and brought the Moon to appear any where on or near the diameter of the field of view of the telescope, which bisects the interval between the wires, give a sweep with the quadrant, and the Sun and Moon will pass by one another: if, in this motion, the nearest limbs, at their nearest approach, just come to touch one another without lapping over, on or near any part of the diameter of the field of the telescope which bisects the interval

terval between the wires, the index is rightly set; but if the nearest limbs either do not come to meet, or lap over one another, alter the index and repeat the observation till the nearest limbs touch one another properly. This method of observing will be found much more easy and expeditious than without the wires; since in that case it would be necessary to make the limbs touch very near the center of the telescope, but here it is only necessary to make them do so any where on or near the diameter of the field of the telescope which bisects the interval between the wires. The same method may be used in taking the Moon's distance from a fixt Star.

It may not be amiss here to make some remarks on the rules that have been usually given for observing the Sun's altitude both with the fore and back-observation, which have all been defective, and to point out the proper directions to be followed when a telescope is not used with two parallel wires to direct the quadrant perpendicular to the horizon, and to shew the principles on which these directions are founded.

Observers are commonly told, that, in making the fore-observation they should move the index to bring the Sun down to the part of the horizon directly beneath him, and turn the quadrant about upon the axis of vision, and when the Sun touches the horizon at the lowest part of the arch described by him the quadrant will shew the altitude above the visible horizon. I allow that this rule would be true, if a person could by sight certainly know the part of the horizon exactly beneath the Sun; but, as this is impossible, the precept is incomplete. Moreover, in taking the Sun's altitude in or near the zenith, this rule intirely fails, and the best observers advise to hold the quadrant vertical and turn one's self about upon the heel, stopping when the Sun glides along the horizon without cutting it: and it is certain that this is a good rule in this case, and capable with care of answering the intended purpose. We have thus two rules for the same thing, which is a proof that neither  
is



is an universal one, or sufficient in all cases alone. In taking the back-observation, observers have been advised either to turn the quadrant about upon the axis of vision, or holding the quadrant vertical to turn themselves about upon the heel, indifferently. Here there is a distinction made between the methods of observing with the fore and back-observations, for which there is no foundation in the principles of the instrument. Besides it seems strange that two such very different methods should be equally prescribed for the same purpose, since they cannot both be right, and perhaps neither may be so. The true state of the case is this; that in taking the Sun's altitude, whether by the fore or back-observation, these two methods must be combined together; that is to say, the observer must turn the quadrant about upon the axis of vision and at the same time turn himself about upon his heel, so as to keep the Sun always in that part of the horizon-glass which is at the same distance as the eye from the plane of the quadrant; for, unless the caution of observing the objects in the proper part of the horizon-glass be attended to, it is evident the angles measured cannot be the true ones. In this way the reflected Sun will appear to describe an arch of a parallel circle round the true Sun, whose convex side will be downwards in the fore-observation and upwards in the back-observation, and consequently when by moving the index the lowest point of the arch in the fore-observation or the uppermost point of the arch in the back-observation is made to touch the horizon, the quadrant will stand in a vertical plane, and the altitude above the visible horizon will be properly observed.

The reason of these operations may be thus explained. The image of the Sun being always kept in the axis of vision, the index will always shew on the quadrant the distance between the Sun and any object seen directly which its image appears to touch; therefore, as long as the index remains unmoved, the image of the Sun will describe an arch every-where equidistant from the Sun in the heavens, and consequently a parallel circle about the Sun

as a pole; such a translation of the Sun's image can only be produced by the quadrant being turned about upon a line drawn from the eye to the Sun as an axis; a motion of rotation upon this line may be considered as compounded of two, one upon the axis of vision and the other upon a vertical axis; therefore the observer by properly combining and proportioning these two motions, one of the quadrant upon the axis of vision, the other of himself upon his heel, keeping himself upright (which gives the quadrant a motion upon a vertical axis) will cause the image of the Sun to describe a parallel circle about the Sun in the heavens without departing from the axis of vision. If it be asked why the observer should be directed to perform two motions rather than the single one equivalent to them on a line drawn from the eye to the Sun as an axis? I answer, that we are not capable, while looking towards the horizon, of judging how to turn the quadrant about upon the elevated line going to the Sun as an axis, by any other means than by combining the two motions above-mentioned, so as to keep the Sun's image always in the proper part of the horizon-glass.

When the Sun is near the horizon the line going from the eye to the Sun will not be far removed from the axis of vision, and consequently the principal motion of the quadrant will be performed on the axis of vision, and the part of the motion made on the vertical axis will be but small. On the contrary, when the Sun is near the zenith, the line going to the Sun is not far removed from a vertical line, and consequently the principal motion of the quadrant will be performed on a vertical axis by the observer's turning himself about, and the part of the motion made on the axis of vision will be but small. In intermediate altitudes of the Sun, the motions of the quadrant on the axis of vision and a vertical axis will be more equally divided. Hence appears the reason of the method used by the best observers in taking the Sun's altitude when near the zenith, by holding the quadrant vertical and turning one's self about upon the heel; and the defects

defects of the rules that have been commonly given for observing altitudes in other cases.

There is a source of error which may affect both the fore and back-observations, namely, if the two surfaces of the index-glass are not exact parallel planes but inclined to one another in a small angle: The rays reflected from the back-surface of such a glass will not proceed in the same direction as they would have done if the two surfaces had been parallel, and the error will increase with the obliquity with which the rays fall on the glass; and therefore, in measuring large angles with the fore-observation, or small angles with the back-observation, a small defect in the parallelism of the planes of the two surfaces may produce a sensible error in the observation. It is true that this error may be removed, if the thickest and thinnest edges of the glass be placed parallel to the plane of the quadrant, agreeable to Mr. Hadley's directions. But, as it may well be questioned whether this care is always taken by the instrument-maker, and it cannot be supposed that the glasses can be ground perfect parallel planes, it would certainly be an advantage acquired to the instrument could the error arising from a want of parallelism of the planes be removed in whatever position the thickest and thinnest edges of the index-glass should be placed with respect to the plane of the quadrant. This will be effected for celestial observations if the upper part of the index-glass be left unsilvered on the back and made rough and blacked, the lower part of the glass being silvered as usual, which must be covered whenever any celestial observations are made. Then, if the telescope be sufficiently raised above the plane of the quadrant, it is evident that the observations will be made by rays reflected from the fore-surface of the upper part of the index-glass, and consequently if the quadrant be adjusted by making use of the same part of the index-glass, the observations will be true whether the two surfaces of the glass are parallel planes or not. The Sun or Moon may be thus observed by reflection from the unsilvered parts of the index-glass and horizon-glass, so that a paler darkening glass will suffice,

[H]



fice, and they will appear much distincter than from an index-glass wholly silvered with a deeper darkening glass; for although the surfaces of a glass may be very parallel, yet there always arises some little confusion from the double reflection. Neither will the Moon appear too weak by two unsilvered reflections, even when her crescent is very small, except she should be hazy or clouded or low towards the horizon; and then the light may be increased by lowering the telescope so as to take in part of the silvered reflection of the index-glass, which in this case must be uncovered: the same is also to be understood with respect to the Sun, should his light be too much weakened by haziness or thin clouds.

The horizon-glasses should be adjusted, or the error of adjustment found by the Sun or Moon; the first will be in general the best object for the purpose; and, as the Sun or Moon seen directly through the unsilvered part of the horizon-glass will be much brighter than the image of the same seen by two unsilvered reflections, it must be weakened by a deep darkening glass placed beyond the horizon-glass, the reflected image being farther weakened, if necessary, by a paler darkening glass placed in the usual manner between the index-glass and horizon-glass.

If a quadrant was designed principally for taking the distance of the Moon from the Sun and fixed Stars, and was not wanted for observing terrestrial angles, it would be the best way to have none of the glasses silvered, but to leave both the horizon-glasses intirely transparent, and to put a red glass for the index-glass of the same matter with the darkening glasses, which would reflect light from the fore-surface only. The Sun's altitude might be also observed with this instrument, either by the fore or back-observation; and the altitude of the Moon might be taken with it in the night. But the altitudes of Stars could not be observed with it, nor the Moon's altitude in the day-time, which would however be no great inconvenience as these  
observations

observations might well enough be supplied by common quadrants.

The following rules for the size of the glasses, and the silvering them, and the height of the telescope may be of use. The index-glass and two horizon-glasses should be all of equal height, and even with one another in height both at top and bottom. The telescope should be moveable parallel to itself nearer to or farther from the plane of the quadrant, and the range of its motion should be such that its axis, when at the lowest station, should point about one tenth of an inch lower than the top of the silvering of the horizon-glasses; and when at the highest station should point to the height of the middle of the unsilvered part of the index-glass. The height of the glasses, and the quantity of the parts silvered and parts unsilvered, should vary according to the aperture of the object-glass, as in the following table; where the first column of figures shews the dimensions, in parts of an inch, answering to an aperture of three tenths of an inch in diameter; the second column, what answer to an aperture of the object-glass of four tenths of an inch in diameter; and the third, what are suitable to an aperture of the object-glass of five tenths of an inch in diameter.

| Diameter of aperture of object-glass —     | Parts of an inch. |       |       |
|--------------------------------------------|-------------------|-------|-------|
|                                            | ,30               | 0, 40 | 0, 50 |
| Height of glasses — — —                    | ,00               | 1, 13 | 1, 37 |
| Height of silvered part of index-glass —   | ,50               | 0, 63 | 0, 77 |
| Height of unsilvered part of ditto — —     | ,40               | 0, 50 | 0, 60 |
| Height of silvered part of horizon-glasses | ,25               | 0, 33 | 0, 42 |
| Height of unsilvered part of ditto — —     | ,65               | 0, 80 | 0, 95 |

If the telescope has a common object-glass, the first aperture of three tenths of an inch will be most convenient; but if it has an achromatic object-glass, one of the other apertures of four tenths or five tenths of an inch will be

most proper. The field of view of the telescope should be five or six degrees, and the objects should be rendered as distinct as possible throughout the whole field by applying two eye-glasses to the telescope. The length of the index-glass and breadth of the horizon-glasses should be determined as usual according to the obliquity with which the rays fall on them, and the aperture of the object-glass.

I shall conclude this paper with some easy rules for finding the apparent angular distance between any two near land-objects by the Hadley's Quadrant.

To find the angular distance between two near objects by the fore observation.—Adjust the fore-horizon-glass by the object intended to be taken as the direct object; and the angle measured by the fore-observation on the arch of the quadrant, between this object and any other object seen by reflection, will be the true angle between them as seen from the centre of the index-glass.—But if the quadrant be already well adjusted by a distant object, and you do not chuse to alter it by adjusting it by a near one, move the index and bring the image of the near direct object to coincide with the same seen directly; and the number of minutes by which (*o*) of the index stands to the right hand of (*o*) of the quadrant upon the arch of excess is the correction, which added to the angle measured by the arch of the quadrant between this direct object and any other object seen by reflection, will give the true angular distance between them reduced to the centre of the index-glass.

To find the angular distance between two near objects by the back observation.—It is supposed that the back-horizon-glass is truly adjusted; if it is not, let it be so. Observe the distance of the objects by the back-observation, and take the supplement of the degrees and minutes standing upon the arch to 180 degrees, which call the instrumental angular distance of the objects; this is to be corrected as follows. Keep the centre of the quadrant or index-glass in the same place as it had in the foregoing observation,



servation, and observe the distance between the near object, which has been just taken as the direct object and some distant object twice; by making both objects to be the direct and reflected ones alternately, holding the divided arch upwards in one case and downwards in the other, still preserving the place of the centre of the quadrant. The difference of these two observations will be the correction, which, added to the instrumental angular distance found as above in the first observation between the first object and any other object seen by reflection, will give the true angular distance between them reduced to the centre of the index-glass.

But if you should happen to be in a place where you cannot command a convenient distant object, the following method may be used. The back-horizon-glass being adjusted, find the instrumental angular distance between the objects; this is to be corrected by means of the following operations. Set up a mark at any convenient distance, opposite or nearly so to the object which has been taken as the direct object; and looking at the direct object move the index of the quadrant, and bring the image of the mark to coincide with the direct object, and read off the degrees and minutes standing on the arch of the quadrant, which subtract from 180 degrees if (o) of the index falls upon the quadrantal arch, but add to 180 degrees if it falls upon the arch of excess, and you will have the instrumental angular distance of the objects. Invert the plane of the quadrant, taking care at the same time not to change the place of its centre, and looking at the same direct object, as before, move the index of the quadrant and bring the image of the mark again to coincide with the direct object, and read off the degrees and minutes standing on the arch, and thence also find the instrumental angular distance of the objects. Take the sum of this and the former instrumental angular distance; half its difference from 360 degrees will be the correction, which, added to the instrumental angular distance first found between the same direct object and the other object seen by reflection,

reflection, will give the true angular distance between them reduced to the centre of the index-glass. It is to be observed, that if the mark be set up at the same distance from the quadrant as the direct object is, there will be no occasion to invert the plane of the quadrant; but the observer need only make the image of the mark coincide with the direct object, then turn himself half round, and now taking the mark for the direct object, cause the image of the former direct object to coincide with the mark, the divided arch of the quadrant being kept upwards, and the place of the centre of the quadrant remaining also the same in both cases: half the difference of the sum of the two instrumental angles from 360 degrees will be the correction of the adjustment as before.

Should only one of the objects be near and the other remote (that is to say half a mile distant or more) let the distant object be taken for the direct one and the near object for the reflected one, and the true distance of the objects as seen from the centre of the index-glass will be obtained without requiring any correction, whether it be the back or fore-observation that is made use of; only observing as usual to take the supplement of what is shewn upon the arch to 180 degrees in the back-observation.

#### A PROBLEM

A  
P R O B L E M

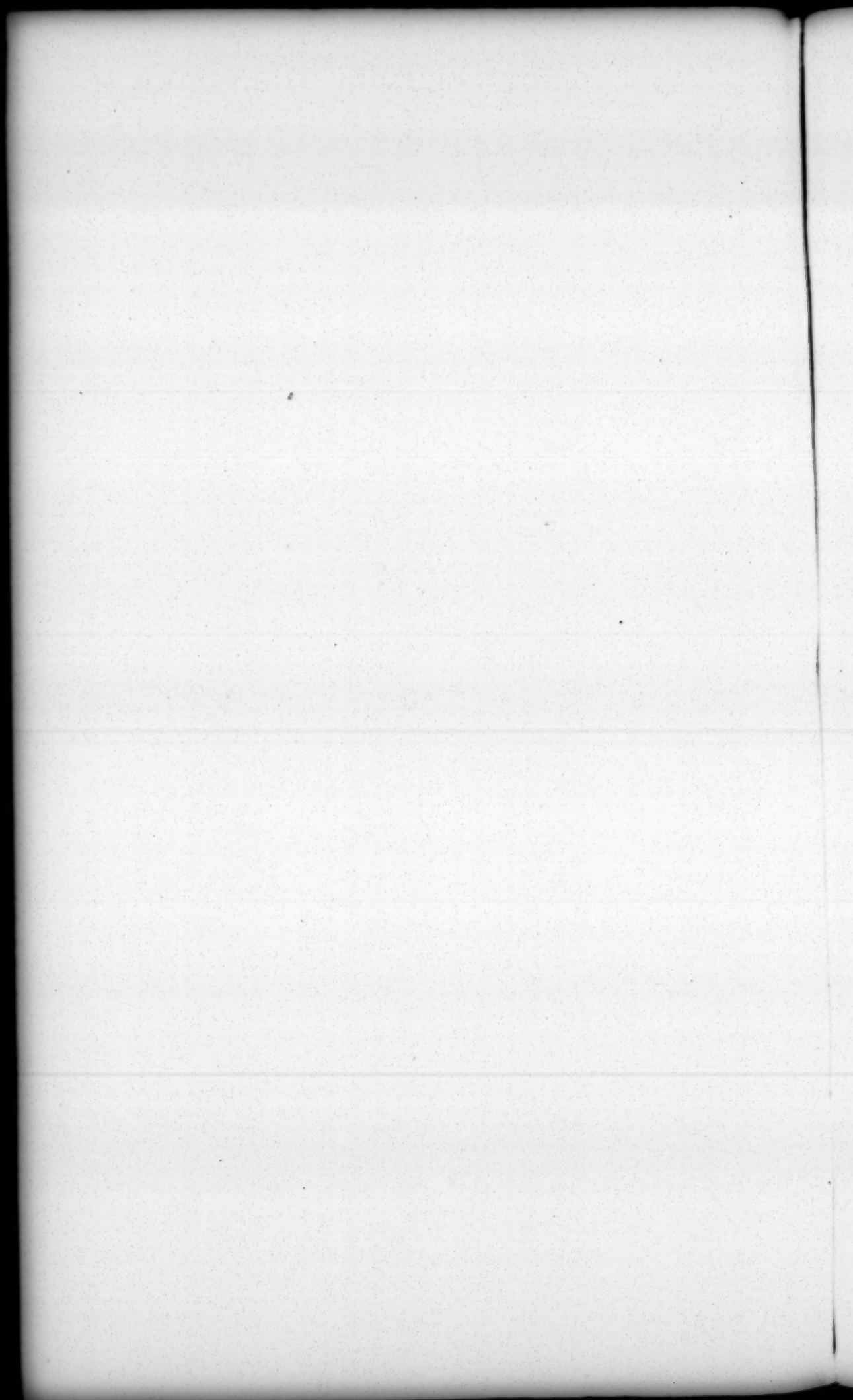
TO FIND

The ERROR in the POSITION of a  
MERIDIANAL TELESCOPE.

BY

MR. LYONS.





A

## P R O B L E M, &amp;c.

**L**ET a circumpolar star be observed through the transit above and below the pole; if the difference of these times is just half a revolution of the earth round its axis (to be found by observations of the fixed stars) the transit is exactly in the plane of the meridian; but if it is not, take the difference between the interval of the times of the two passages and half a revolution, and to the logistie logarithm of half this difference turned into parts of a circle add the logarithmic cotangent of the star's polar distance, and the logarithmic cosine of the latitude of the place, the sum, rejecting 20 from the index, will be the logistie logarithm of the angle that the transit makes with the true meridian.

If the star, when above the pole, comes later to the wires of the telescope than half a revolution after it passed it when below the pole, the transit lies to the east of the true south meridian.

To the logistie logarithm of the error in azimuth before found, add the logarithmic secant of the star's altitude, and the logarithmic sine of its polar distance, the sum, rejecting 20 from the index, is the logistie logarithm of an arc, which turned into time will be the error of the transit from the true meridian at that altitude.

[I]

EXAMPLE.

## E X A M P L E.

Suppose at Cambridge (lat.  $52^{\circ} 12\frac{1}{2}'$ .) by a clock which loses  $3'. 10''$ . a day on solar time, Capella was observed to pass the hair below the pole at  $6^h. 0'$ . at night, and the next morning to pass it above the pole at  $5^h. 56'. 21''$ .

|                                           | H.  | M.  | S. |
|-------------------------------------------|-----|-----|----|
| To the time of passing below the pole     | 6.  | 0.  | 0  |
| Add half a revolution or half of $23^h$ . |     |     |    |
| $56'. 50''$                               | 11. | 58. | 25 |
| <hr/>                                     |     |     |    |
| The sum                                   | 5.  | 58. | 25 |

is the time that it would have passed if the telescope was exactly in the meridian.

But it passed at

|    |     |    |
|----|-----|----|
| 5. | 56. | 21 |
|----|-----|----|

---

|                                            |     |      |   |
|--------------------------------------------|-----|------|---|
| The difference is                          | 0.  | 2.   | 4 |
| In parts of degrees $31'. 0''$ .           |     |      |   |
| Its half $15'. 30''$ . Logist. log.        | 0.  | 5878 |   |
| Cotang. polar. dist. $44^{\circ}. 15'$ .   | 10. | 0114 |   |
| Cofine lat. $52^{\circ}. 12\frac{1}{2}'$ . | 9.  | 7873 |   |

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The sum is the logist. log. of  $24'. 38''$ . 0.3865

Therefore the instrument declines  $24'. 38''$ . to the west of the true south meridian.

To find the error in the transit below the pole.

|                                           |     |      |
|-------------------------------------------|-----|------|
| Error in azimuth. Logist. log.            | 0.  | 3865 |
| Secant alt. $7^{\circ}. 57\frac{1}{2}'$ . | 10. | 0042 |
| Sine pol. dist. $44^{\circ}. 15'$ .       | 9.  | 8437 |

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The sum is the logist. log. of  $34'. 58''$ . 0.2344

This turned into time gives  $2'. 20''$ . the error in the first observation, which, subtracted from  $6^h. 0'. 0''$ . gives  $5^h. 57'. 40''$ . the time that Capella passed the north meridian.

To



To find the error in the transit above the pole.

|                                                |              |       |          |
|------------------------------------------------|--------------|-------|----------|
| Error in azimuth.                              | Logist. log. | . . . | 0. 3865  |
| Secant alt. . . $96^{\circ}. 27\frac{1}{2}'$ . | . . .        | . . . | 10. 9494 |
| Sine pol. dist. $44^{\circ}. 15'$ .            | . . .        | . . . | 9. 8437  |

The sum is the logist. log. of  $3'. 58''$ . . . 1. 1796

This turned into time is  $16''$ , the error in the second observation, which, subtracted from  $5^h. 56'. 21''$ . gives  $5^h. 56'. 5''$ . the time that Capella passed the fourth meridian.

The difference of these times is  $11^h. 58'. 25''$ . which is exactly half a revolution of the fixed stars shewn by the clock.

If it is only required to find the error of the transit at the altitude where the star passes either above or below the pole, add together the logistic logarithm of half the difference between the interval of the two observations and half a revolution, the logarithmic cosine of the star's polar distance, the logarithmic cosine of the latitude, and the logarithm secant of the star's altitude, the sum, rejecting 30 from the index, is the logistic logarithm of an arc, which, turned into time, is the error of the observation from the time of the true passage over the meridian.

In the above example.

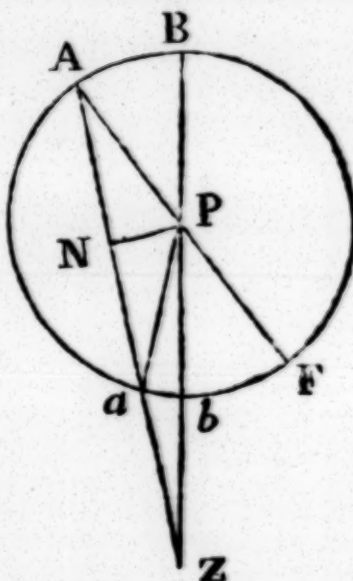
|                           |                                |              |          |
|---------------------------|--------------------------------|--------------|----------|
| Half difference . . . . . | $0^{\circ}. 15'. 30''$ .       | Logist. log. | 0. 5873  |
| Cosine pol. dist. . . . . | $44^{\circ}. 15'$ .            | . . . . .    | 9. 8551  |
| Cosine lat. . . . .       | $52^{\circ}. 12\frac{1}{2}'$ . | . . . . .    | 9. 7873  |
| Sec. alt. below the pole  | $7^{\circ}. 57\frac{1}{2}'$ .  | . . . . .    | 10. 0042 |

The sum is the logist. log. of  $34'. 58''$ . as before. 0. 2344

D E M O N.

## DEMONSTRATION.

Let Z be the zenith, P the pole, Z P B the meridian, Z a A the position of a transit instrument, thro' which a star passed at a and A, produce A P to F, then a F is the difference between the interval of the two observations and half a revolution.



In the triangle  $APa$ .  $S. aPA$   
 $(=Sine aPF) : S. aAP :: (Sine Aa :$   
 $S. AP :: S. 2AP : S. AP :: 2 Cof.$   
 $AP : Rad.::) 2 S. AP : tang. AP.$

In the right-angled triangle  $APN$ .  $S. a AP : S. PN :: Rad. : Sin. AP$ .

In the right-angled triangle PNZ.....S. PN : S. PZN :: S.  
ZP : Rad.

Therefore ex æquo  $S. a P F : S. P Z N :: 2 S. Z P : \text{tang. } A P$  and  $P Z N = \frac{1}{2} \frac{a P F \times \text{tang. } A P}{S. Z P} = \frac{1}{2} \text{diff.} \times \text{tang. Pol. diff.} \times \text{Sec. Lat.}$

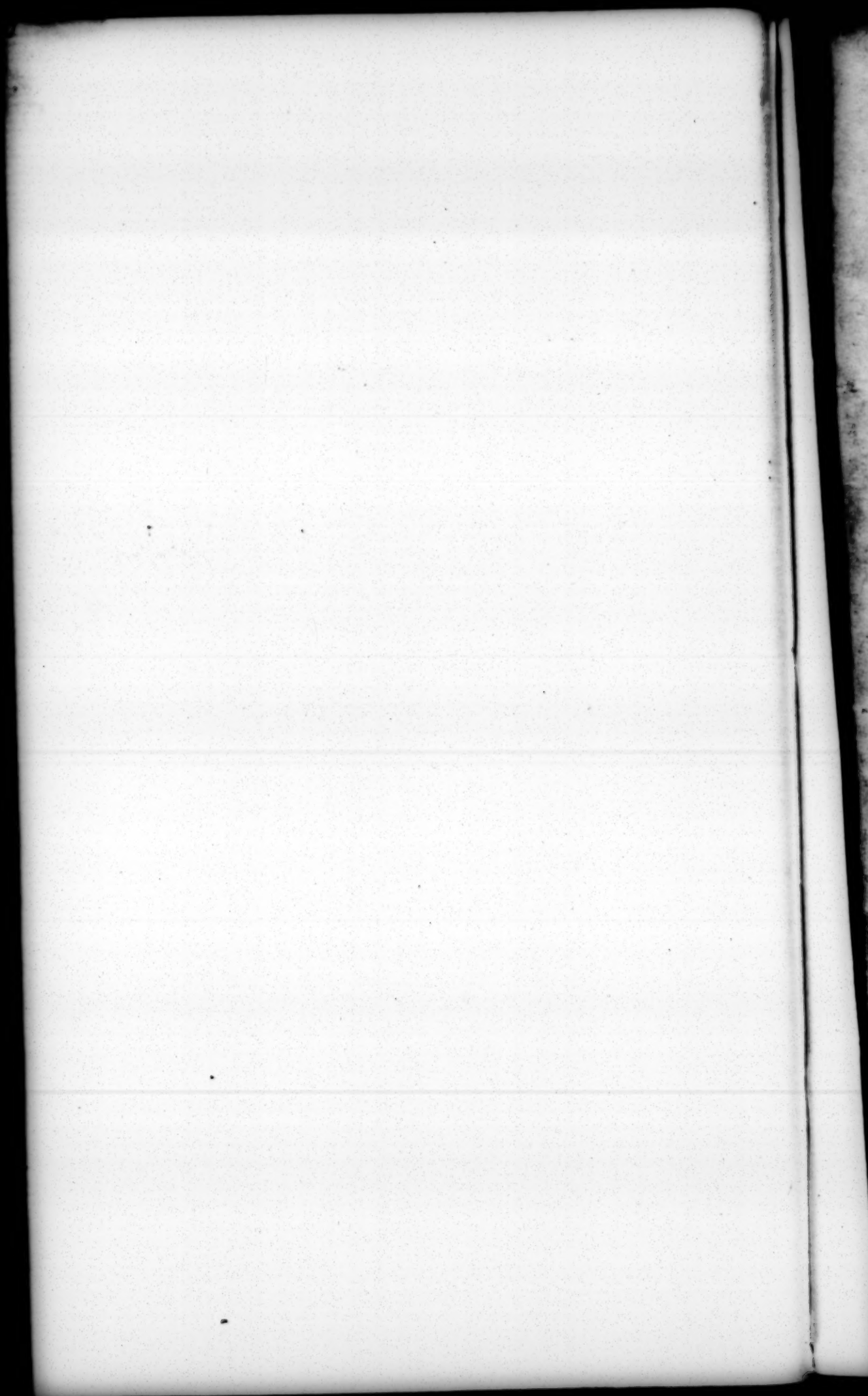
In the triangle  $APZ$ ,  $S.PZA : S.ZPA$  ( $S.APB$ )  $:: S.$   
 $AP : S.ZA$  and  $APB = \frac{PZA \times S.ZA}{S.AP} = \text{Err. Azim.}$   
 $\times \text{Cof. Alt.} \times \text{Cofec. Pol. dist.}$

If for PZ A we substitute its value just now found, we shall have  $APB = \frac{\frac{1}{2} a PF \times \text{tang. } AP \times S. ZA}{S. ZP \times S. AP} = \frac{\frac{1}{2} a PF \times S. ZA}{S. ZP \times \text{Cof. } AP}$   
 $\frac{1}{2} \text{ diff.} \times \text{Cofine Alt.} \times \text{Sec. Lat.} \times \text{Sec. Pol. dist.}$

T W O  
E X A M P L E S  
O F T H E  
Calculation of the Longitude,  
F R O M A  
L U N A R O B S E R V A T I O N,  
When the general TABLES of REFRACTION  
and PARALLAX are made Use of.

By MR. L Y O N S.







| (2) Change for odd minutes. |              |          |                   |           | True diff. . . . . 58. 40. 21                   |            | D + 1°. 2. 36           | 1732                       |
|-----------------------------|--------------|----------|-------------------|-----------|-------------------------------------------------|------------|-------------------------|----------------------------|
| Red. S.                     | Pro. part S. | Odd min. | Cor. log.         | Pro. part | (4) Diff. at 9 <sup>h</sup> . . . . . 57. 11. 8 |            |                         |                            |
| * . . . 68 . . . 33         |              | 29       | + 452 . . . . .   | + 218     | ... at 12 <sup>h</sup> . . . . . 58. 52. 23     |            |                         |                            |
| D . . . 31 . . . 10         |              | 19       | — 92 . . . . .    | 30        | Diff. from 9 <sup>h</sup> . . . . . 1. 29. 13   |            | Prop. log. . . . . 3048 |                            |
| D . . . 32 . . . 27         |              | 38       | + 230 . . . . .   | 132       | Change in 3 <sup>h</sup> . . . . . 1. 41. 15    |            | Prop. log. . . . . 2499 |                            |
|                             |              |          |                   |           |                                                 | H. M. S.   |                         |                            |
|                             |              |          |                   |           |                                                 | 2. 38. 37  |                         |                            |
|                             |              |          |                   |           |                                                 | 9. 0. 0    |                         | 549                        |
| True red. + 2. 25           |              |          | Cor. log. . . . . | + 1822    | Time at Greenwich . . . . .                     | 11. 38. 37 |                         |                            |
|                             |              |          |                   |           | Exceeds above 53' . . . 7'. 2" . . .            | 4. 36. 36  |                         |                            |
| Cor. of red. + 6.           |              |          |                   | + 1929    | Longitude W . . . . .                           | 7. 2. 1    |                         | — 105°. 30 $\frac{1}{2}$ ' |
| Cor. of diff. 2 + 31        |              | (3)      |                   |           |                                                 |            |                         |                            |

The part ruled round with double lines is the calculation of the time to find the error of the watch.

The figures included in parentheses mark the order in which the rest of the computations should be made. (1) To take the reductions and correcting logarithms out of the general table. (2) To find the proportional parts for odd minutes of the moon and star altitudes and distance. (3) To find the true distance. (4) To find the longitude of the ship from this distance and those computed in the Ephemeris.



# E X A M P L E I.

1773.

Distance of the Moon and Sun's nearest Limbs.

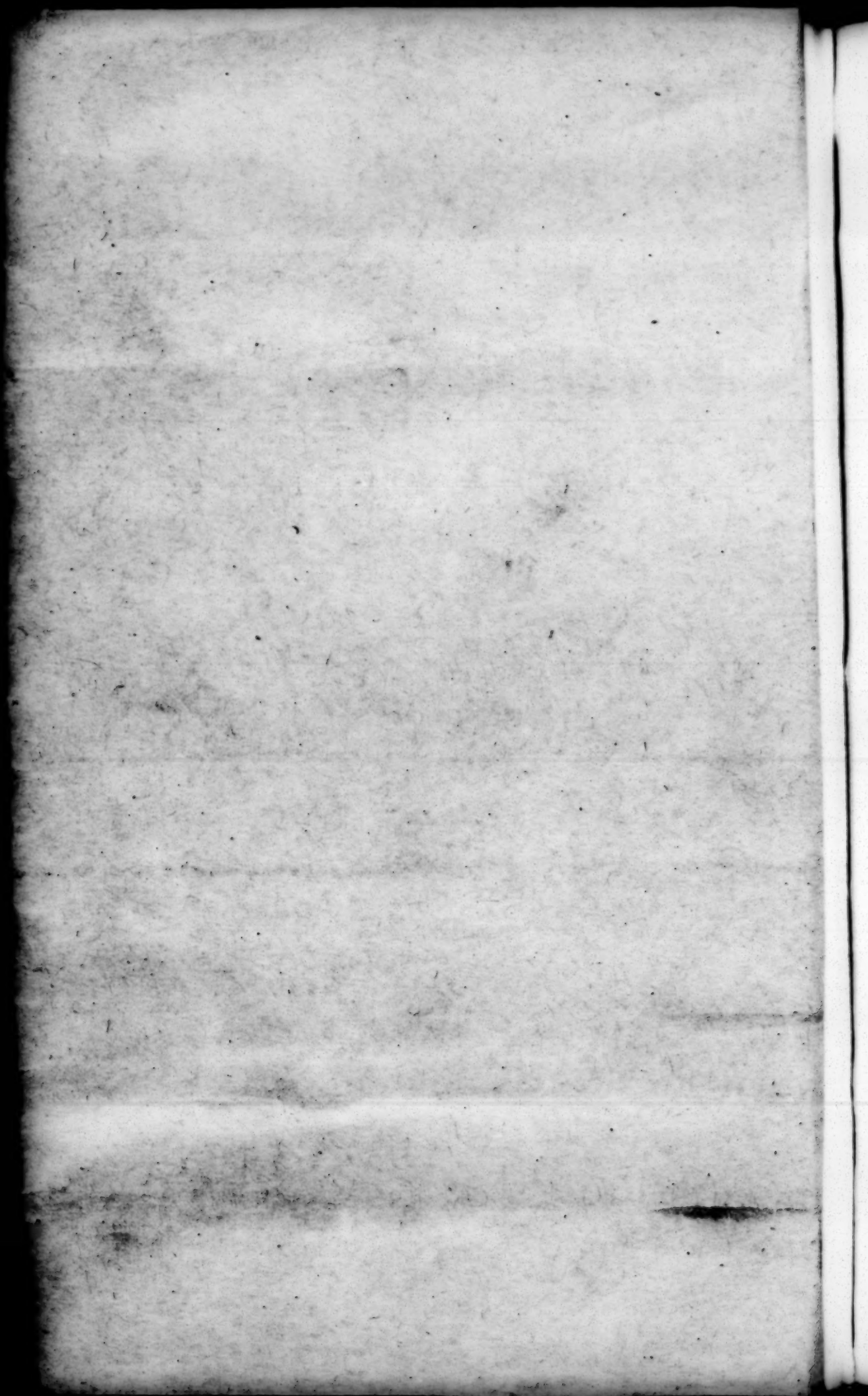
|                                        |              |                               |          |                                         |                    |                                              |             |               |        |
|----------------------------------------|--------------|-------------------------------|----------|-----------------------------------------|--------------------|----------------------------------------------|-------------|---------------|--------|
| D.                                     | H. M. S.     | D. M.                         | D. M.    | D. M.                                   | D. M.              | D. M.                                        | D. M.       | D. M.         | D. M.  |
| Sept. 20 . . . . .                     | 4. 32. 0     | Alt. $\odot$ L . . . . .      | 16. 17   | Declin. . . . .                         | 0. 53 N            | Alt. $\odot$ . . . . .                       | 34. 7       | * . . . . .   | 15. 17 |
| Long. by acc. W + 6. 0. 0              |              | Dip. 4'. Ref. 3'. . . . .     | — 7      | Change in $10^{\frac{1}{2}}$ h. . . . . | — 10               | Dip. . . . .                                 | — 4         | Dip . . . . . | — 4    |
| Time at Greenw. 10. 30. 0              |              | Semidiameter . . . . .        | 16. 10   |                                         | 0. 43              | Semidiam. + 16                               | 34. 19      | + 16          | + 16   |
|                                        |              |                               |          |                                         |                    |                                              |             |               |        |
| Zenith dist. . . . .                   | D. M. 73. 34 | Alt. $\odot$ 's cent. . . . . | 16. 26   | Time by watch . . . . .                 | H. M. S. 4. 30. 0  | Hor. par. . . . .                            | M. S. 60. 9 |               |        |
| Polar dist. . . . .                    | 89. 17       | Ar. comp. fine . . . . .      | 0. 00003 | Watch too slow . . . . .                | + 6. 36            | Change in $10^{\frac{1}{2}}$ h. . . . .      | — 7         |               |        |
| Co. lat. . . . .                       | 50. 35       | Ar. comp. fine . . . . .      | 0. 11207 | Apparent time . . . . .                 | 4. 36. 36          |                                              | 60. 2       |               |        |
| Sum . . . . .                          | 213. 26      |                               |          | Long. by account . . . . .              | + 6. 0. 0          |                                              |             |               |        |
| Half sum . . . . .                     | 106. 43      | Sine . . . . .                | 9. 98125 | Supposed time at Greenwich 10. 36. 36   |                    |                                              |             |               |        |
|                                        |              |                               |          |                                         |                    |                                              |             |               |        |
| Diff. $\frac{1}{2}$ S. & Z. D. . . . . | 33. 9        | Sine . . . . .                | 9. 73785 | Observed distance . . . . .             | D. M. S. 58. 5. 20 | D $58^{\circ}$ D $34^{\circ}$ * $16^{\circ}$ |             |               |        |
|                                        |              |                               |          | Semidiam. $\odot$ + $9'$ . . . . .      | + 16. 30           | Red.                                         | Cor. log.   |               |        |
|                                        |              |                               |          | Semidiam. $\odot$ . . . . .             | + 16. 0            | ...                                          | + 3'. 8"    | + 1502        |        |
|                                        |              |                               |          | Central dist. . . . .                   | 58. 37. 50         | * + $1^{\circ}$ . 2. 0                       |             | 1954          |        |
|                                        |              |                               |          | Cor. of dist. (3) . . . . .             | + 2. 31            | D + $1^{\circ}$ . 3. 39                      |             | 1410          |        |
| Apparent time . . . . .                | 69. 9        | Cofine . . . . .              | 9. 91560 | True dist. . . . .                      | 58. 40. 21         | D + $1^{\circ}$ . 2. 36                      |             | 1732          |        |
| Watch too slow . . . . .               | 6. 36        | H. M. S. 4. 36. 36            |          | Diff. at 9 <sup>h</sup> . . . . .       | 57. 11. 8          |                                              |             |               |        |
|                                        |              |                               |          |                                         |                    |                                              |             |               |        |

Change for odd minutes.









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